

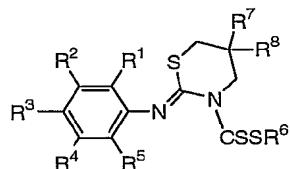
表 4 1

化 合 物 番 号	物性	
No	融点	NMR ( $\text{CDCl}_3$ )
I-271		1.04 (3H, s), 1.08 (3H, s), 1.29 (6H, d), J=6.9), 2.69(2H, s), 3.40 (1H, sept, J=6.9), 3.43 (3H, s), 3.51 (2H, s), 7.18-7.29 (2H, m), 7.36-7.45 (2H, m)
I-272		0.96 (3H, s), 1.05 (3H, s), 1.25 (3H, d, J=6.9), 1.26 (3H, d, J=6.9), 2.61 (1H, d, J=12), 2.70 (1H, d, J=12), 3.39 (1H, sept, J=6.9), 3.45-3.58 (2H, m), 7.02-7.07 (2H, m), 7.11-7.18 (1H, m), 7.38-7.45 (2H, m), 7.61-7.70 (2H, m)
I-273		0.84 (3H, s), 1.00 (3H, s), 1.25 (3H, d, J=6.9), 1.29 (3H, J=6.9), 2.43 (3H, s), 2.53 (1H, d, J=12), 2.64 (1H, d, J=12), 3.29 (1H, d, J=16), 3.42 (1H, d, J=16), 3.47 (1H, sept, J=6.9), 7.09-7.19 (2H, m), 7.24-7.29 (2H, m), 7.38-7.45 (2H, m), 7.81-7.86 (2H, m)
I-274		0.99 (6H, s), 1.19 (6H, d, J=6.9), 2.40 (3H, s), 2.67 (2H, s), 2.87 (1H, sept, J=6.9), 3.43 (2H, s), 7.11-7.29 (6H, m), 7.68 (2H, d, J=8.1)
I-275		1.07 (6H, s), 1.26 (6H, d, J=6.9), 1.38 (3H, t, J=7.2), 2.71 (2H, s), 2.93 (1H, sept, J=6.9), 3.51 (2H, s), 3.60 (2H, q, J=7.2), 7.20-7.30 (4H, m)
I-276		1.19 (6H, s), 1.23 (6H, d, J=6.9), 2.77 (2H, s), 2.87 (1H, sept, J=6.9), 3.58 (2H, s), 6.65-6.69 (2H, m), 6.91 (1H, d, J=7.5), 7.20 (1H, t, J=7.5), 7.51 (2H, d, J=9.3), 8.22 (2H, d, J=9.3)
I-277		0.99 (6H, s), 1.20 (6H, d, J=6.9), 2.67 (2H, s), 2.88 (1H, sept, J=6.9), 3.44 (2H, s), 3.85 (3H, s), 6.86-6.90 (2H, m), 7.11-7.26 (4H, m), 7.72-7.76 (2H, m)

表 4 2

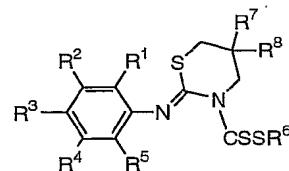
化 合 物 番 号	物性		
	No	融点	NMR ( $\text{CDCl}_3$ )
I-278			1.03 (6H, s), 1.20 (6H, d, $J=6.9$ ), 2.70 (2H, s), 2.88 (1H, sept, $J=6.9$ ), 3.44 (2H, s), 7.08-7.31 (4H, m), 7.60 (1H, t, $J=8.4$ ), 8.04 (1H, d, $J=8.4$ ), 8.39 (d, $J=8.4$ ), 8.74 (1H, s)
I-279			1.01 (6H, s), 1.19 (6H, d, $J=6.9$ ), 2.69 (2H, s), 2.88 (1H, sept, $J=6.9$ ), 3.42 (2H, s), 7.09-7.32 (4H, m), 7.68 (2H, d, $J=8.4$ ), 7.92 (2H, d, $J=8.4$ ),
I-280			1.19 (3H, s), 1.21 (3H, s), 1.23-1.30 (6H, m), 2.62 (1H, d, $J=12$ ), 2.82 (1H, sept, $J=6.9$ ), 3.02 (1H, d, $J=12$ ), 3.46-3.70 (2H, m), 6.53-6.60 (2H, m), 6.86 (1H, d, $J=7.8$ ), 7.13 (1H, t, $J=7.8$ ), 7.28-7.40 (2H, m), 7.61-7.66 (1H, m), 7.90 (1H, dd, $J=7.5, 1.2$ )

表 4 3



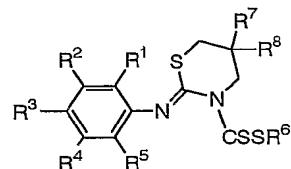
No	R <sup>1</sup>	R <sup>2</sup>	R <sup>3</sup>	R <sup>4</sup>	R <sup>5</sup>	R <sup>6</sup>	R <sup>7</sup>	R <sup>8</sup>
II-1	Pr <sup>i</sup>	H	H	H	H	Allyl	Me	Me
II-2	Pr <sup>i</sup>	H	H	H	H	Propargyl	Me	Me
II-3	Pr <sup>i</sup>	H	H	H	H	CH <sub>2</sub> CN	Me	Me
II-4	Pr <sup>i</sup>	H	H	H	H	CH <sub>2</sub> OMe	Me	Me
II-5	Pr <sup>i</sup>	H	H	H	H	CH <sub>2</sub> CH=CHMe	Me	Me
II-6	Pr <sup>i</sup>	H	H	H	H	CH <sub>2</sub> CH=CMe <sub>2</sub>	Me	Me
II-7	Pr <sup>i</sup>	H	H	H	H	CH <sub>2</sub> CH <sub>2</sub> CH=CH <sub>2</sub>	Me	Me
II-8	Pr <sup>i</sup>	H	H	H	H	CH <sub>2</sub> COMe	Me	Me
II-9	Pr <sup>i</sup>	H	H	H	H	CH <sub>2</sub> CO <sub>2</sub> H	Me	Me
II-10	Pr <sup>i</sup>	H	H	H	H	CH <sub>2</sub> CO <sub>2</sub> Me	Me	Me
II-11	Pr <sup>i</sup>	H	H	H	H	CH <sub>2</sub> CO <sub>2</sub> Et	Me	Me
II-12	Pr <sup>i</sup>	H	H	H	H	CH <sub>2</sub> CO <sub>2</sub> Pr	Me	Me
II-13	Pr <sup>i</sup>	H	H	H	H	CH <sub>2</sub> CO <sub>2</sub> Pr <sup>i</sup>	Me	Me
II-14	Pr <sup>i</sup>	H	H	H	H	CH <sub>2</sub> CO <sub>2</sub> Bu <sup>t</sup>	Me	Me
II-15	Pr <sup>i</sup>	H	H	H	H	CH <sub>2</sub> CO <sub>2</sub> CH=CH <sub>2</sub>	Me	Me
II-16	Pr <sup>i</sup>	H	H	H	H	CH <sub>2</sub> CO <sub>2</sub> CH <sub>2</sub> CH=CH <sub>2</sub>	Me	Me
II-17	Pr <sup>i</sup>	H	H	H	H	CH <sub>2</sub> CO <sub>2</sub> (CH <sub>2</sub> ) <sub>2</sub> OMe	Me	Me
II-18	Pr <sup>i</sup>	H	H	H	H	CH(Me)CO <sub>2</sub> Me	Me	Me
II-19	Pr <sup>i</sup>	H	H	H	H	C(Me) <sub>2</sub> CO <sub>2</sub> Et	Me	Me
II-20	Pr <sup>i</sup>	H	H	H	H	CH <sub>2</sub> CONH <sub>2</sub>	Me	Me
II-21	Pr <sup>i</sup>	H	H	H	H	CH <sub>2</sub> CONMe <sub>2</sub>	Me	Me
II-22	Pr <sup>i</sup>	H	H	H	H	CH <sub>2</sub> CON(Me)OMe	Me	Me
II-23	Pr <sup>i</sup>	H	H	H	H	CH <sub>2</sub> CF <sub>3</sub>	Me	Me
II-24	Pr <sup>i</sup>	H	H	H	H	CH <sub>2</sub> CH <sub>2</sub> OOCMe	Me	Me
II-25	Pr <sup>i</sup>	H	H	H	H	CH <sub>2</sub> CH <sub>2</sub> OPh	Me	Me

表 4 4



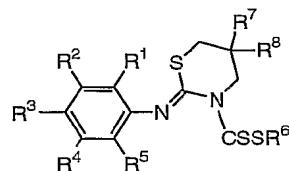
No	R <sup>1</sup>	R <sup>2</sup>	R <sup>3</sup>	R <sup>4</sup>	R <sup>5</sup>	R <sup>6</sup>	R <sup>7</sup>	R <sup>8</sup>
II-26	Pr <sup>i</sup>	H	H	H	H	CH <sub>2</sub> CH <sub>2</sub> OCH=CH <sub>2</sub>	Me	Me
II-27	Pr <sup>i</sup>	H	H	H	H	-CH <sub>2</sub> -	Me	Me
II-28	Pr <sup>i</sup>	H	H	H	H	-CH <sub>2</sub> -	Me	Me
II-29	Pr <sup>i</sup>	H	H	H	H	-CH <sub>2</sub> -	Me	Me
II-30	Pr <sup>i</sup>	H	H	H	H	-CH <sub>2</sub> -	Me	Me
II-31	Pr <sup>i</sup>	H	H	H	H	-CH <sub>2</sub> -	Me	Me
II-32	Pr <sup>i</sup>	H	H	H	H	-CH <sub>2</sub> -	Me	Me
II-33	Pr <sup>i</sup>	H	H	H	H	-CH <sub>2</sub> -	Me	Me
II-34	Pr <sup>i</sup>	H	H	H	H	-CH <sub>2</sub> -	Me	Me
II-35	Pr <sup>i</sup>	H	H	H	H	-CH <sub>2</sub> -	Me	Me
II-36	Pr <sup>i</sup>	H	H	H	H	-CH <sub>2</sub> -	Me	Me
II-37	Pr <sup>i</sup>	H	H	H	H	-CH <sub>2</sub> CH <sub>2</sub> -N	Me	Me
II-38	Pr <sup>i</sup>	H	H	H	H	-CH <sub>2</sub> -	Me	Me
II-39	Pr <sup>i</sup>	H	H	H	H	Allyl	Et	Et
II-40	Pr <sup>i</sup>	H	H	H	H	CH <sub>2</sub> CO <sub>2</sub> Et	Et	Et
II-41	Pr <sup>i</sup>	H	H	H	H	CH <sub>2</sub> CO <sub>2</sub> Pr <sup>i</sup>	Et	Et
II-42	Pr <sup>i</sup>	H	H	H	H	CH <sub>2</sub> CO <sub>2</sub> Bu <sup>t</sup>	Et	Et
II-43	Pr <sup>i</sup>	H	H	H	H	CH <sub>2</sub> CH <sub>2</sub> CO <sub>2</sub> Et	Et	Et

表 4 5



No	R <sup>1</sup>	R <sup>2</sup>	R <sup>3</sup>	R <sup>4</sup>	R <sup>5</sup>	R <sup>6</sup>	R <sup>7</sup>	R <sup>8</sup>
II-44	Pr <sup>i</sup>	H	H	H	H	CH <sub>2</sub> CH=CHMe	Et	Et
II-45	Pr <sup>i</sup>	H	H	H	H	CH <sub>2</sub> CH=CMe <sub>2</sub>	Et	Et
II-46	Pr <sup>i</sup>	H	H	H	H	CH <sub>2</sub> CH <sub>2</sub> CH=CH <sub>2</sub>	Et	Et
II-47	Bu <sup>s</sup>	H	H	H	H	CH <sub>2</sub> CO <sub>2</sub> Et	Me	Me
II-48	Bu <sup>s</sup>	H	H	H	H	CH <sub>2</sub> CO <sub>2</sub> Bu <sup>t</sup>	Me	Me
II-49	Bu <sup>s</sup>	H	H	H	H	Allyl	Et	Et
II-50	Bu <sup>s</sup>	H	H	H	H	CH <sub>2</sub> CH <sub>2</sub> OCOMe	Et	Et
II-51	Bu <sup>s</sup>	H	H	H	H	-CH <sub>2</sub> CH <sub>2</sub> -N()	Et	Et
II-52	H	H	Et	H	H	CH <sub>2</sub> CO <sub>2</sub> Et	Me	Me
II-53	H	Pr <sup>i</sup>	H	H	H	CH <sub>2</sub> CO <sub>2</sub> Et	Me	Me
II-54	NMe <sub>2</sub>	H	H	H	H	CH <sub>2</sub> CO <sub>2</sub> Et	Me	Me
II-55	H	NMe <sub>2</sub>	H	H	H	CH <sub>2</sub> CO <sub>2</sub> Et	Me	Me
II-56	H	NEt <sub>2</sub>	H	H	H	CH <sub>2</sub> CO <sub>2</sub> Et	Me	Me
II-57	H	H	Et	H	H	CH <sub>2</sub> CO <sub>2</sub> Bu <sup>t</sup>	Me	Me
II-58	H	Pr <sup>i</sup>	H	H	H	CH <sub>2</sub> CO <sub>2</sub> Bu <sup>t</sup>	Me	Me
II-59	NMe <sub>2</sub>	H	H	H	H	CH <sub>2</sub> CO <sub>2</sub> Bu <sup>t</sup>	Me	Me
II-60	H	NMe <sub>2</sub>	H	H	H	CH <sub>2</sub> CO <sub>2</sub> Bu <sup>t</sup>	Me	Me
II-61	H	NEt <sub>2</sub>	H	H	H	CH <sub>2</sub> CO <sub>2</sub> Bu <sup>t</sup>	Me	Me
II-62	H	NEt <sub>2</sub>	H	H	H	Allyl	Me	Me
II-63	Me	NEt <sub>2</sub>	H	H	H	Allyl	Me	Me
II-64	Me	NMe <sub>2</sub>	H	H	H	Allyl	Me	Me
II-65	NMe <sub>2</sub>	H	H	H	H	Allyl	Et	Et
II-66	NMe <sub>2</sub>	H	H	H	H	CH <sub>2</sub> CO <sub>2</sub> Bu <sup>t</sup>	Et	Et
II-67	OMe	H	H	H	H	Allyl	Et	Et
II-68	OMe	H	H	H	H	CH <sub>2</sub> CO <sub>2</sub> Bu <sup>t</sup>	Et	Et
II-69	H	H	Et	H	H	Allyl	Et	Et
II-70	H	H	Et	H	H	CH <sub>2</sub> CO <sub>2</sub> Bu <sup>t</sup>	Et	Et

表 4 6



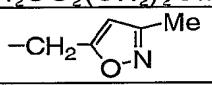
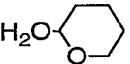
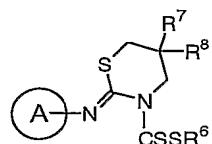
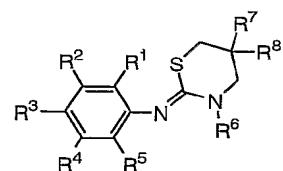
No	R <sup>1</sup>	R <sup>2</sup>	R <sup>3</sup>	R <sup>4</sup>	R <sup>5</sup>	R <sup>6</sup>	R <sup>7</sup>	R <sup>8</sup>
II-71	H	H	OCF <sub>3</sub>	H	H	Allyl	Et	Et
II-72	H	H	OCF <sub>3</sub>	H	H	CH <sub>2</sub> CO <sub>2</sub> Bu <sup>t</sup>	Et	Et
II-73	NMe <sub>2</sub>	H	H	H	H	CH <sub>2</sub> OMe	Et	Et
II-74	Pr <sup>i</sup>	H	H	H	H	Allyl	-(CH <sub>2</sub> ) <sub>4</sub> -	
II-75	NMe <sub>2</sub>	H	H	H	H	Allyl	-(CH <sub>2</sub> ) <sub>4</sub> -	
II-76	NMe <sub>2</sub>	H	H	H	H	CH <sub>2</sub> CO <sub>2</sub> Bu <sup>t</sup>	-(CH <sub>2</sub> ) <sub>4</sub> -	
II-77	Pr <sup>i</sup>	H	H	H	H	CH <sub>2</sub> CO <sub>2</sub> (CH <sub>2</sub> ) <sub>2</sub> OMe	-(CH <sub>2</sub> ) <sub>4</sub> -	
II-78	Pr <sup>i</sup>	H	H	H	H	-CH <sub>2</sub> - 	-(CH <sub>2</sub> ) <sub>4</sub> -	
II-79	OMe	H	H	H	H	Allyl	-(CH <sub>2</sub> ) <sub>4</sub> -	
II-80	OMe	H	H	H	H	CH <sub>2</sub> CO <sub>2</sub> Bu <sup>t</sup>	-(CH <sub>2</sub> ) <sub>4</sub> -	
II-81	NMe <sub>2</sub>	H	H	H	H	CH <sub>2</sub> OMe	-(CH <sub>2</sub> ) <sub>4</sub> -	
II-82	H	H	Et	H	H	Allyl	-(CH <sub>2</sub> ) <sub>4</sub> -	
II-83	H	H	OCF <sub>3</sub>	H	H	Allyl	-(CH <sub>2</sub> ) <sub>4</sub> -	
II-84	NMe <sub>2</sub>	H	H	H	H	Allyl	-(CH <sub>2</sub> ) <sub>5</sub> -	
II-85	NMe <sub>2</sub>	H	H	H	H	CH <sub>2</sub> CO <sub>2</sub> Bu <sup>t</sup>	-(CH <sub>2</sub> ) <sub>5</sub> -	
II-86	OMe	H	H	H	H	Allyl	-(CH <sub>2</sub> ) <sub>5</sub> -	
II-87	OMe	H	H	H	H	CH <sub>2</sub> CO <sub>2</sub> Bu <sup>t</sup>	-(CH <sub>2</sub> ) <sub>5</sub> -	
II-88	H	H	Et	H	H	Allyl	-(CH <sub>2</sub> ) <sub>5</sub> -	
II-89	Pr <sup>i</sup>	H	H	H	H	-CH <sub>2</sub> CH <sub>2</sub> O- 	-(CH <sub>2</sub> ) <sub>5</sub> -	
II-90	Pr <sup>i</sup>	H	H	H	H	CH <sub>2</sub> CH <sub>2</sub> OH	-(CH <sub>2</sub> ) <sub>5</sub> -	
II-91	H	H	OCF <sub>3</sub>	H	H	Allyl	-(CH <sub>2</sub> ) <sub>5</sub> -	
II-92	Pr <sup>i</sup>	H	H	H	H	Allyl	-(CH <sub>2</sub> ) <sub>2</sub> O(CH <sub>2</sub> ) <sub>2</sub> -	
II-93	Pr <sup>i</sup>	H	H	H	H	Me	-(CH <sub>2</sub> ) <sub>2</sub> O(CH <sub>2</sub> ) <sub>2</sub> -	
II-94	Pr <sup>i</sup>	H	H	H	H	CH <sub>2</sub> CO <sub>2</sub> H	Et	Et

表 4 7



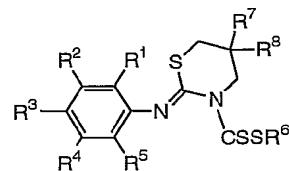
	A	R <sup>6</sup>	R <sup>7</sup>	R <sup>8</sup>
II-95		Allyl	Me	Me
II-96		CH <sub>2</sub> CO <sub>2</sub> Bu <sup>t</sup>	Me	Me
II-97		CH <sub>2</sub> CO <sub>2</sub> (CH <sub>2</sub> ) <sub>2</sub> OMe	Me	Me
II-98		Allyl	Et	Et
II-99		CH <sub>2</sub> CO <sub>2</sub> Bu <sup>t</sup>	Et	Et
II-100		Allyl	Et	Et
II-101		Allyl	-(CH <sub>2</sub> ) <sub>4</sub> -	
II-102		CH <sub>2</sub> CO <sub>2</sub> Bu <sup>t</sup>	-(CH <sub>2</sub> ) <sub>4</sub> -	
II-103		Allyl	-(CH <sub>2</sub> ) <sub>4</sub> -	
II-104		Allyl	-(CH <sub>2</sub> ) <sub>5</sub> -	
II-105		Allyl	-(CH <sub>2</sub> ) <sub>5</sub> -	

表 4 8



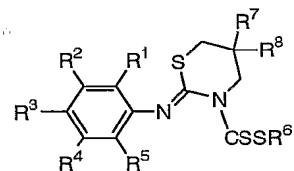
	R <sup>1</sup>	R <sup>2</sup>	R <sup>3</sup>	R <sup>4</sup>	R <sup>5</sup>	R <sup>6</sup>	R <sup>7</sup>	R <sup>8</sup>
II-106	Pr <sup>i</sup>	H	H	H	H	-	Me	Me
II-107	Pr <sup>i</sup>	H	H	H	H	-	Me	Me
II-108	Pr <sup>i</sup>	H	H	H	H	-	Me	Me
II-109	Pr <sup>i</sup>	H	H	H	H	-	Me	Me
II-110	H	H	Pr	H	H	-	Me	Me
II-111	Pr <sup>i</sup>	H	H	H	H	-	Et	Et
II-112	Pr <sup>i</sup>	H	H	H	H	-	Me	Me
II-113	Pr <sup>i</sup>	H	H	H	H	CSSMe	-(CH <sub>2</sub> ) <sub>2</sub> N(CH <sub>2</sub> Ph)(CH <sub>2</sub> ) <sub>2</sub> -	

表 4 9



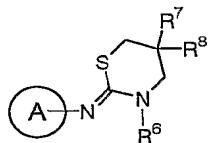
	$\text{R}^1$	$\text{R}^2$	$\text{R}^3$	$\text{R}^4$	$\text{R}^5$	$\text{R}^6$	$\text{R}^7$	$\text{R}^8$
II-114	H	SMe	H	H	H	Allyl	Et	Et
II-115	H	SMe	H	H	H	Allyl	$-(\text{CH}_2)_4-$	
II-116	H	SMe	H	H	H	Allyl	$-(\text{CH}_2)_5-$	
II-117	H	H	SMe	H	H	Allyl	$-(\text{CH}_2)_4-$	
II-118	H	H	SMe	H	H	Allyl	$-(\text{CH}_2)_5-$	
II-119	OMe	H	Et	H	H	Allyl	Me	Me
II-120	OMe	H	$\text{Pr}^i$	H	H	Allyl	Me	Me
II-121	$\text{Pr}^i$	H	OMe	H	H	Allyl	Me	Me
II-122	$\text{Pr}^i$	H	OEt	H	H	Allyl	Me	Me
II-123	H	OEt	OEt	H	H	Allyl	Me	Me
II-124	H	OPr	OPr	H	H	Allyl	Me	Me
II-125	H	OMs	OEt	H	H	Allyl	Me	Me
II-126	H	H	$(\text{CH}_2)_2\text{OEt}$	H	H	Allyl	Me	Me
II-127	H	OMe	OEt	H	H	Allyl	Et	Et
II-128	H	OEt	OEt	H	H	Allyl	Et	Et
II-129	H	OEt	OPr	H	H	Allyl	Et	Et
II-130	H	OMs	OPr	H	H	Allyl	Et	Et
II-131	H	OPr	OPr	H	H	Allyl	Et	Et
II-132	H	OPr $^i$	OPr	H	H	Allyl	Et	Et
II-133	H	H	$(\text{CH}_2)_2\text{NMe}_2$	H	H	Allyl	Me	Me
II-134	$\text{Pr}^i$	H	H	H	H	$\text{CH}_2\text{CO}_2\text{B}_{\text{u}^t}$	$-(\text{CH}_2)_5-$	
II-135	$\text{Pr}^i$	H	H	H	H	Me	$-(\text{CH}_2)_2\text{N}(\text{Me})(\text{CH}_2)_2-$	
II-136	$\text{Pr}^i$	H	H	H	H	Me	$-(\text{CH}_2)_2\text{N}(\text{Et})(\text{CH}_2)_2-$	
II-137	F	H	F	H	H	Allyl	Me	Me
II-138	H	Cl	Cl	H	H	Allyl	Me	Me
II-139	Me	H	Cl	H	H	Allyl	Me	Me
II-140	Cl	H	Me	H	H	Allyl	Me	Me
II-141	H	H	$(\text{CH}_2)_2\text{OMe}$	H	H	Allyl	Me	Me
II-142	H	H	$\text{Pr}^i$	H	H	Allyl	$-(\text{CH}_2)_4-$	
II-143	H	H	$\text{Pr}^i$	H	H	$\text{CH}_2\text{CO}_2\text{B}_{\text{u}^t}$	$-(\text{CH}_2)_4-$	

表 5 0



	R <sup>1</sup>	R <sup>2</sup>	R <sup>3</sup>	R <sup>4</sup>	R <sup>5</sup>	R <sup>6</sup>	R <sup>7</sup>	R <sup>8</sup>
II-144	H	H	Pr <sup>i</sup>	H	H	Allyl	Et	Et
II-145	H	H	Pr <sup>i</sup>	H	H	CH <sub>2</sub> CO <sub>2</sub> B <sub>u<sup>t</sup></sub>	Et	Et
II-146	H	H	Pr <sup>i</sup>	H	H	Allyl	-(CH <sub>2</sub> ) <sub>5</sub> -	
II-147	OMe	H	H	H	H	CH <sub>2</sub> CO <sub>2</sub> B <sub>u<sup>t</sup></sub>	Pr	Pr
II-148	OMe	H	H	H	H	CH <sub>2</sub> CO <sub>2</sub> B <sub>u<sup>t</sup></sub>	Pr <sup>i</sup>	Pr <sup>i</sup>
II-149	OMe	H	H	H	H	Allyl	Pr	Pr
II-150	Bu <sup>s</sup>	H	H	H	H	Me	-(CH <sub>2</sub> ) <sub>2</sub> N(Me)(CH <sub>2</sub> ) <sub>2</sub> -	

表 5 1



	A	R <sup>6</sup>	R <sup>7</sup>	R <sup>8</sup>
II-151		CSSCH <sub>2</sub> CO <sub>2</sub> Bu <sup>t</sup>	-(CH <sub>2</sub> ) <sub>5</sub> -	
II-152		CSSCH <sub>2</sub> CO <sub>2</sub> Bu <sup>t</sup>	Et	Et
II-153		COSMe	-(CH <sub>2</sub> ) <sub>2</sub> N(Me)(CH <sub>2</sub> ) <sub>2</sub> -	
II-154		COSMe	-(CH <sub>2</sub> ) <sub>2</sub> N(Me)(CH <sub>2</sub> ) <sub>2</sub> -	

表 5 2

化合物番号 No	物性	
	融点	NMR ( $\text{CDCl}_3$ )
II-1		1.20 (6H, d, $J=6.9$ ), 1.23 (6H, s), 2.66 (2H, s), 3.09 (1H, sept, $J=6.9$ ), 3.93-3.97 (2H, m), 4.49 (2H, s), 5.15-5.19 (1H, m), 5.28-5.39 (1H, m), 5.86-6.01 (1H, m), 6.89-6.94 (1H, m), 7.11-7.21 (2H, m), 7.29-7.34 (1H, m)
II-2	93.5-94.5	1.21 (6H, d, $J=6.9$ ), 1.23 (6H, s), 2.20 (1H, t, $J=2.6$ ), 2.69 (2H, s), 3.09 (1H, sept, $J=6.9$ ), 3.99 (2H, d, $J=2.6$ ), 4.49 (2H, s), 6.90-6.94 (1H, m), 7.14-7.22 (2H, m), 7.32-7.35 (1H, m)
II-3		1.21 (6H, d, $J=6.9$ ), 1.25 (6H, s), 2.74 (2H, s), 3.02 (1H, sept, $J=6.9$ ), 4.00 (2H, s), 4.50 (2H, s), 6.87-6.90 (1H, m), 7.15-7.22 (2H, m), 7.32-7.36 (1H, m)
II-4	73-74	1.21 (6H, d, $J=6.9$ ), 1.24 (6H, s), 2.67 (2H, s), 3.10 (1H, sept, $J=6.9$ ), 3.44 (3H, s), 4.48 (2H, s), 5.45 (2H, s), 6.92-6.96 (1H, m), 7.16-7.20 (2H, m), 7.32-7.35 (1H, m)
II-5		1.19 (6H, d, $J=6.9$ ), 1.22 (6H, s), 1.71 (3H, d, $J=6.6$ ), 2.64 (2H, s), 3.15 (1H, sept, $J=6.9$ ), 3.88 (2H, d, $J=6.9$ ), 4.49 (2H, s), 5.56-5.62 (1H, m), 5.69-5.78 (1H, m), 6.89-6.94 (1H, m), 7.11-7.21 (2H, m), 7.29-7.34 (1H, m)
II-6		1.19 (6H, d, $J=6.9$ ), 1.23 (6H, s), 1.72 (3H, d, $J=6.9$ ), 2.65 (2H, s), 3.15 (1H, sept, $J=6.9$ ), 3.89 (2H, d, $J=6.9$ ), 4.49 (2H, s), 5.28-5.35 (1H, m), 6.87-6.92 (1H, m), 7.11-7.21 (2H, m), 7.29-7.34 (1H, m)
II-7		1.19 (6H, d, $J=6.9$ ), 1.23 (6H, s), 2.47 (2H, q, $J=7.4$ ), 2.64 (2H, s), 3.15 (1H, sept, $J=6.9$ ), 3.34 (2H, t, $J=7.4$ ), 4.48 (2H, s), 5.01-5.14 (2H, m), 5.74-5.98 (1H, m), 6.82-6.89 (1H, m), 7.11-7.21 (2H, m), 7.29-7.34 (1H, m)
II-8	92-96	1.20 (6H, d, $J=6.9$ ), 1.22 (6H, s), 2.35 (3H, s), 2.70 (2H, s), 3.08 (1H, sept, $J=6.9$ ), 4.12 (2H, s), 4.46 (2H, s), 6.92-6.97 (1H, m), 7.11-7.22 (2H, m), 7.30-7.35 (1H, m)
II-9		1.20 (6H, d, $J=6.9$ ), 1.24 (6H, s), 2.74 (2H, s), 3.05 (1H, sept, $J=6.9$ ), 4.17 (2H, s), 4.39 (2H, s), 6.93-6.97 (1H, m), 7.18-7.24 (2H, m), 7.33-7.38 (1H, m)
II-10	82-83	1.20 (6H, d, $J=6.9$ ), 1.22 (6H, s), 2.70 (2H, s), 3.09 (1H, sept, $J=6.9$ ), 3.75 (3H, s), 4.07 (2H, s), 4.48 (2H, s), 6.92-6.95 (1H, m), 7.13-7.21 (2H, m), 7.31-7.35 (1H, m)

表 5 3

化合物番号 No	物性	
	融点	NMR ( $\text{CDCl}_3$ )
II-11	95.5-96.5	1.20 (6H, d, $J=6.9$ ), 1.22 (6H, s), 1.29 (3H, t, $J=7.3$ ), 2.70 (2H, s), 3.09 (1H, sept, $J=6.9$ ), 4.06 (2H, s), 4.21 (2H, q, $J=7.3$ ), 4.48 (2H, s), 6.92-6.96 (1H, m), 7.15-7.19 (2H, m), 7.31-7.34 (1H, m)
II-12	83-86	0.96 (3H, t, $J=7.3$ ), 1.20 (6H, d, $J=6.9$ ), 1.22 (6H, s), 1.68 (2H, sext, $J=7.3$ ), 2.70 (2H, s), 3.09 (1H, sept, $J=6.9$ ), 4.07 (2H, s), 4.11 (2H, t, $J=7.3$ ), 4.48 (2H, s), 6.92-6.95 (1H, m), 7.13-7.20 (2H, m), 7.31-7.34 (1H, m)
II-13	95-96	1.20 (6H, d, $J=6.9$ ), 1.22 (6H, s), 1.27 (6H, d, $J=6.3$ ), 2.70 (2H, s), 3.09 (1H, sept, $J=6.9$ ), 4.02 (2H, s), 4.47 (2H, s), 5.06 (1H, sept, $J=6.3$ ), 6.92-6.97 (1H, m), 7.13-7.21 (2H, m), 7.29-7.34 (1H, m)
II-14		1.20 (6H, d, $J=6.9$ ), 1.22 (6H, s), 1.47 (9H, s), 2.69 (2H, s), 3.09 (1H, sept, $J=6.9$ ), 3.97 (2H, s), 4.47 (2H, s), 6.92-6.96 (1H, m), 7.11-7.20 (2H, m), 7.31-7.34 (1H, m)
II-15		1.21 (6H, d, $J=6.9$ ), 1.22 (6H, s), 2.70 (2H, s), 3.08 (1H, sept, $J=6.9$ ), 4.13 (2H, s), 4.48 (2H, s), 4.62 (1H, dd, $J=6.3, 1.7$ ), 4.95 (1H, dd, $J=13.9, 1.7$ ), 6.92-6.95 (1H, m), 7.13-7.35 (4H, m)
II-16		1.20 (6H, d, $J=6.9$ ), 1.22 (6H, s), 2.69 (2H, s), 3.08 (1H, sept, $J=6.9$ ), 4.10 (2H, s), 4.47 (2H, s), 4.63-4.66 (2H, m), 5.23-5.39 (2H, m), 5.86-5.98 (1H, m), 6.92-6.95 (1H, m), 7.15-7.21 (2H, m), 7.31-7.34 (1H, m)
II-17		1.20 (6H, d, $J=6.9$ ), 1.22 (6H, s), 2.70 (2H, s), 3.08 (1H, sept, $J=6.9$ ), 3.40 (3H, s), 3.61-3.65 (2H, m), 4.11 (2H, d, $J=2.3$ ), 4.29-4.37 (2H, m), 4.47 (2H, s), 6.92-6.95 (1H, m), 7.13-7.20 (2H, m), 7.31-7.34 (1H, m)
II-18		1.19-1.23 (12H, m), 1.58 (3H, d, $J=7.3$ ), 2.62 (1H, d, $J=13.2$ ), 2.74 (1H, d, $J=13.2$ ), 3.11 (1H, sept, $J=6.9$ ), 3.74 (3H, s), 4.18 (1H, d, $J=13.5$ ), 4.66 (1H, q, $J=7.3$ ), 4.72 (1H, d, $J=13.5$ ), 6.91-6.94 (1H, m), 7.13-7.21 (2H, m), 7.31-7.35 (1H, m)
II-19		1.21 (6H, d, $J=6.9$ ), 1.21 (6H, s), 1.28 (3H, t, $J=7.3$ ), 1.71 (6H, s), 2.66 (2H, s), 3.14 (1H, sept, $J=6.9$ ), 4.18 (2H, q, $J=7.3$ ), 4.40 (2H, s), 6.88-6.92 (1H, m), 7.13-7.21 (2H, m), 7.31-7.35 (1H, m)
II-20	117-119	1.21 (6H, d, $J=6.9$ ), 1.24 (6H, s), 2.69 (2H, s), 3.05 (1H, sept, $J=6.9$ ), 4.03 (2H, s), 4.48 (2H, s), 5.35 (1H, brs), 6.50 (1H, brs), 6.89-6.92 (1H, m), 7.14-7.22 (2H, m), 7.32-7.35 (1H, m)

表 5 4

化合物番号	物性	
No	融点	NMR ( $\text{CDCl}_3$ )
II-21		1.20 (6H, d, $J=6.9$ ), 1.22 (6H, s), 2.69 (2H, s), 2.97 (3H, s), 3.10 (1H, sept, $J=6.9$ ), 3.15 (3H, s), 4.20 (2H, s), 4.47 (2H, s), 6.94-6.97 (1H, m), 7.12-7.20 (2H, m), 7.30-7.33 (1H, m)
II-22		1.20 (6H, d, $J=6.9$ ), 1.22 (6H, s), 2.71 (2H, s), 3.10 (1H, sept, $J=6.9$ ), 3.23 (3H, s), 3.82 (3H, s), 4.33 (2H, s), 4.47 (2H, s), 6.95-7.00 (1H, m), 7.12-7.21 (2H, m), 7.30-7.34 (1H, m)
II-23		1.20 (6H, d, $J=6.9$ ), 1.23 (6H, s), 2.68 (2H, s), 3.09 (1H, sept, $J=6.9$ ), 4.22 (2H, q, $J=9.9$ ), 4.50 (2H, s), 6.89-6.95 (1H, m), 7.14-7.23 (2H, m), 7.31-7.36 (1H, m)
II-24		1.18 (6H, d, $J=6.9$ ), 1.23 (6H, s), 2.07 (3H, s), 2.67 (2H, s), 3.09 (1H, sept, $J=6.9$ ), 3.57 (2H, t, $J=6.6$ ), 4.35 (2H, t, $J=6.6$ ), 4.49 (2H, s), 6.88-6.92 (1H, m), 7.13-7.22 (2H, m), 7.30-7.35 (1H, m)
II-25		1.20 (6H, d, $J=6.9$ ), 1.23 (6H, s), 2.65 (2H, s), 3.10 (1H, sept, $J=6.9$ ), 3.71 (2H, t, $J=6.6$ ), 4.29 (2H, t, $J=6.6$ ), 4.49 (2H, s), 6.89-6.97 (4H, m), 7.15-7.21 (2H, m), 7.25-7.34 (3H, m)
II-26		1.21 (6H, d, $J=6.9$ ), 1.23 (6H, s), 2.66 (2H, s), 3.10 (1H, sept, $J=6.9$ ), 3.60 (2H, t, $J=6.6$ ), 3.99-4.05 (3H, m), 4.24 (1H, dd, 14.2, 1.9), 4.49 (2H, s), 6.47 (1H, dd, 14.2, 6.9), 6.89-6.94 (1H, m), 7.15-7.21 (2H, m), 7.31-7.34 (1H, m)
II-27		1.20 (6H, d, $J=6.9$ ), 1.23 (6H, s), 3.09 (1H, sept, $J=6.9$ ), 3.64 (2H, s, $J=4.6$ ), 3.84-4.03 (4H, m), 4.49 (2H, s), 5.21 (1H, t, $J=4.6$ ), 6.91-6.96 (1H, m), 7.12-7.21 (2H, m), 7.30-7.34 (1H, m)
II-28	124-126	1.17 (6H, d, $J=6.9$ ), 1.23 (6H, s), 2.38 (3H, s), 2.67 (2H, s), 3.06 (1H, sept, $J=6.9$ ), 4.50 (2H, s), 4.55 (2H, s), 6.05 (1H, s), 6.86-6.90 (1H, m), 7.12-7.19 (2H, m), 7.30-7.33 (1H, m)
II-29		0.94 (6H, d, $J=6.6$ ), 1.17 (6H, d, $J=6.9$ ), 1.23 (6H, s), 1.93-2.08 (1H, m), 2.58 (2H, d, $J=6.6$ ), 2.66 (2H, s), 3.07 (1H, sept, $J=6.9$ ), 4.50 (2H, s), 4.55 (2H, s), 6.05 (1H, s), 6.85-6.91 (1H, m), 7.12-7.19 (2H, m), 7.28-7.33 (1H, m)
II-30	129-130	1.17 (6H, d, $J=6.9$ ), 1.23 (6H, s), 1.31 (9H, s), 2.67 (2H, s), 3.08 (1H, sept, $J=6.9$ ), 4.51 (2H, s), 4.59 (2H, s), 6.00 (1H, s), 6.87-6.91 (1H, m), 7.14-7.19 (2H, m), 7.30-7.33 (1H, m)

表 5 5

化合物番号 No	物性	
	融点	NMR ( $\text{CDCl}_3$ )
II-31		1.18 (6H, d, $J=6.9$ ), 1.24 (6H, s), 2.68 (2H, s), 3.07 (1H, sept, $J=6.9$ ), 4.52 (2H, s), 4.64 (2H, s), 6.61 (1H, s), 6.88-6.91 (1H, m), 7.12-7.19 (2H, m), 7.29-7.33 (1H, m), 7.41-7.48 (3H, m), 7.71-7.76 (2H, m)
II-32		1.18 (6H, d, $J=6.9$ ), 1.22 (6H, s), 2.26 (3H, s), 2.66 (2H, s), 3.06 (1H, sept, $J=6.9$ ), 4.48 (2H, s), 4.58 (2H, s), 6.09 (1H, s), 6.87-6.92 (1H, m), 7.13-7.20 (2H, m), 7.28-7.34 (1H, m)
II-33		1.18 (6H, d, $J=6.9$ ), 1.21 (6H, s), 1.25 (6H, d, $J=6.9$ ), 2.66 (2H, s), 3.02 (1H, sept, $J=6.9$ ), 3.04 (1H, sept, $J=6.9$ ), 4.49 (2H, s), 4.59 (2H, s), 6.12 (1H, s), 6.88-6.92 (1H, m), 7.13-7.21 (2H, m), 7.29-7.34 (1H, m)
II-34		0.94 (6H, d, $J=6.6$ ), 1.18 (6H, d, $J=6.9$ ), 1.21 (6H, s), 1.88-2.05 (1H, m), 2.49 (2H, d, $J=6.6$ ), 2.65 (2H, s), 3.07 (1H, sept, $J=6.9$ ), 4.49 (2H, s), 4.59 (2H, s), 6.09 (1H, s), 6.87-6.91 (1H, m), 7.13-7.20 (2H, m), 7.29-7.34 (1H, m)
II-35	124-125	1.18 (6H, d, $J=6.9$ ), 1.21 (6H, s), 1.30 (9H, s), 2.65 (2H, s), 3.07 (1H, sept, $J=6.9$ ), 4.49 (2H, s), 4.59 (2H, s), 6.15 (1H, s), 6.88-6.93 (1H, m), 7.13-7.21 (2H, m), 7.29-7.34 (1H, m)
II-36		1.17 (6H, d, $J=6.9$ ), 1.22 (6H, s), 1.26 (9H, s), 2.67 (2H, s), 3.07 (1H, sept, $J=6.9$ ), 4.49 (2H, s), 4.59 (2H, s), 6.61 (1H, s), 6.88-6.92 (1H, m), 7.11-7.18 (2H, m), 7.29-7.32 (1H, m)
II-37		1.21 (6H, d, $J=6.9$ ), 1.23 (6H, s), 2.52-2.56 (4H, m), 2.65 (2H, s), 2.68-2.73 (2H, m), 3.11 (1H, sept, $J=6.9$ ), 3.41-3.52 (2H, m), 3.70-3.73 (4H, m), 4.48 (2H, s), 6.87-6.92 (1H, m), 7.15-7.19 (2H, m), 7.31-7.35 (1H, m)
II-38	123.5-124.5	1.20 (6H, d, $J=6.9$ ), 1.23 (6H, s), 1.38 (6H, s), 2.67 (2H, s), 2.80 (2H, s), 3.08 (1H, sept, $J=6.9$ ), 4.32 (2H, s), 4.49 (2H, s), 6.87-6.91 (1H, m), 7.16-7.21 (2H, m), 7.31-7.35 (1H, m)
II-39		0.88 (6H, t, $J=7.4$ ), 1.20 (6H, d, $J=6.9$ ), 1.47-1.62 (4H, m), 2.61 (2H, s), 3.08 (1H, sept, $J=6.9$ ), 3.93-3.97 (2H, m), 4.43 (2H, s), 5.15-5.19 (1H, m), 5.28-5.39 (1H, m), 5.86-6.01 (1H, m), 6.89-6.94 (1H, m), 7.16-7.21 (2H, m), 7.30-7.36 (1H, m)
II-40		0.87 (6H, t, $J=7.4$ ), 1.20 (6H, d, $J=6.9$ ), 1.28 (3H, t, $J=7.3$ ), 1.42-1.60 (4H, m), 2.64 (2H, s), 3.11 (1H, sept, $J=6.9$ ), 4.06 (2H, s), 4.21 (2H, q, $J=7.3$ ), 4.43 (2H, s), 6.91-6.96 (1H, m), 7.15-7.19 (2H, m), 7.31-7.34 (1H, m)

表 5 6

化合物番号	物性	
No	融点	NMR ( $\text{CDCl}_3$ )
II-41		0.87 (6H, t, $J=7.4$ ), 1.20 (6H, d, $J=6.9$ ), 1.27 (6H, d, $J=7.0$ ), 1.48-1.63 (4H, m), 2.65 (2H, s), 3.11 (1H, sept, $J=6.9$ ), 4.02 (2H, s), 4.43 (2H, s), 5.01 (1H, sept, $J=7.0$ ), 6.91-6.96 (1H, m), 7.15-7.19 (2H, m), 7.31-7.34 (1H, m)
II-42		0.88 (6H, t, $J=7.4$ ), 1.20 (6H, d, $J=6.9$ ), 1.46 (9H, s), 1.42-1.60 (4H, m), 2.64 (2H, s), 3.11 (1H, sept, $J=6.9$ ), 3.90 (2H, s), 4.42 (2H, s), 6.89-6.96 (1H, m), 7.18-7.23 (2H, m), 7.31-7.34 (1H, m)
II-43		0.88 (6H, t, $J=7.4$ ), 1.20 (6H, d, $J=6.9$ ), 1.26 (3H, t, $J=7.0$ ), 1.42-1.60 (4H, m), 2.60 (2H, s), 2.79 (2H, t, $J=7.2$ ), 3.08 (1H, sept, $J=6.9$ ), 3.54 (2H, t, $J=7.2$ ), 4.16 (2H, q, $J=7.0$ ), 4.43 (2H, s), 6.89-6.94 (1H, m), 7.15-7.19 (2H, m), 7.31-7.34 (1H, m)
II-44		0.88 (6H, t, $J=7.4$ ), 1.19 (6H, d, $J=6.9$ ), 1.50-1.70 (4H, m), 1.71 (3H, d, $J=6.9$ ), 2.61 (2H, s), 3.15 (1H, sept, $J=6.9$ ), 3.88 (2H, d, $J=6.9$ ), 4.43 (2H, s), 5.56-5.62 (1H, m), 5.69-5.78 (1H, m), 6.89-6.94 (1H, m), 7.11-7.21 (2H, m), 7.29-7.34 (1H, m)
II-45		0.88 (6H, t, $J=7.2$ ), 1.19 (6H, d, $J=6.9$ ), 1.48-1.65 (4H, m), 1.72 (6H, d, $J=6.9$ ), 2.61 (2H, s), 3.15 (1H, sept, $J=6.9$ ), 3.89 (2H, d, $J=6.9$ ), 4.44 (2H, s), 5.28-5.35 (1H, m), 6.87-6.92 (1H, m), 7.11-7.21 (2H, m), 7.29-7.34 (1H, m)
II-46		0.88 (6H, t, $J=7.1$ ), 1.19 (6H, d, $J=6.9$ ), 1.48-1.65 (4H, m), 2.47 (2H, q, $J=7.4$ ), 2.60 (2H, s), 3.12 (1H, sept, $J=6.9$ ), 3.34 (2H, t, $J=7.4$ ), 4.44 (2H, s), 5.01-5.14 (2H, m), 5.74-5.98 (1H, m), 6.82-6.89 (1H, m), 7.11-7.21 (2H, m), 7.29-7.34 (1H, m)
II-47		0.85 (3H, t, $J=7.4$ ), 1.18 (3H, d, $J=7.4$ ), 1.23 (6H, s), 1.26 (3H, t, $J=7.0$ ), 1.42-1.60 (4H, m), 2.68 (2H, s), 3.11 (1H, sext, $J=7.0$ ), 4.06 (2H, s), 4.15 (2H, q, $J=7.0$ ), 4.38 (1H, d, $J=13.5$ ), 4.57 (1H, d, $J=13.5$ ), 6.83-6.90 (1H, m), 7.11-7.19 (2H, m), 7.28-7.31 (1H, m)
II-48		0.85 (3H, t, $J=7.4$ ), 1.18 (3H, d, $J=7.4$ ), 1.23 (6H, s), 1.47 (9H, s), 1.42-1.60 (4H, m), 2.68 (2H, s), 3.00 (1H, sext, $J=7.0$ ), 4.01 (2H, s), 4.38 (1H, d, $J=13.5$ ), 4.57 (1H, d, $J=13.5$ ), 6.89-6.95 (1H, m), 7.11-7.19 (2H, m), 7.28-7.31 (1H, m)
II-49		0.82-0.91 (9H, m), 1.17 (3H, d, $J=6.9$ ), 2.61 (2H, s), 2.87 (1H, sext, $J=6.9$ ), 3.65 (2H, d, $J=6.9$ ), 4.30 (1H, d, $J=13.5$ ), 4.57 (1H, d, $J=13.5$ ), 5.15-5.35 (2H, m), 5.86-5.99 (1H, m), 6.88-6.92 (1H, m), 7.11-7.28 (3H, m)
II-50		0.83-0.92 (9H, m), 1.18 (3H, d, $J=6.9$ ), 1.47-1.69 (6H, m), 2.06 (3H, s), 2.62 (2H, s), 2.87 (1H, sext, $J=6.9$ ), 3.58 (2H, t, $J=6.6$ ), 4.31 (1H, d, $J=13.9$ ), 4.35 (2H, t, $J=6.6$ ), 4.55 (1H, d, $J=13.9$ ), 6.88-6.91 (1H, m), 7.11-7.20 (2H, m), 7.25-7.29 (1H, m)

表 5 7

化合物番号	物性	
No	融点	NMR ( $\text{CDCl}_3$ )
II-51		0.83-0.92 (9H, m), 1.18 (3H, d, $J=6.9$ ), 2.53-2.56 (4H, m), 2.60 (2H, s), 2.71 (2H, t, $J=7.3$ ), 2.90 (1H, sept, $J=6.9$ ), 3.45 (2H, t, $J=7.3$ ), 3.69-3.73 (6H, m), 4.32 (1H, d, $J=13.9$ ), 4.55 (1H, d, $J=13.9$ ), 6.89-6.91 (1H, m), 7.14-7.20 (2H, m), 7.25-7.29 (1H, m)
II-52		1.22 (6H, s), 1.24 (3H, t, $J=7.3$ ), 1.33 (3H, t, $J=7.2$ ), 2.64 (2H, q, $J=7.3$ ), 2.66 (2H, s), 4.06 (2H, s), 4.20 (2H, q, $J=7.2$ ), 4.48 (2H, s), 6.97 (2H, d, $J=8.3$ ), 7.20 (2H, d, $J=8.3$ )
II-53		1.22 (6H, s), 1.26 (6H, d, $J=6.9$ ), 1.29 (3H, t, $J=7.2$ ), 2.70 (2H, s), 2.94 (1H, sept, $J=6.9$ ), 4.06 (2H, s), 4.12 (2H, q, $J=7.2$ ), 4.49 (2H, s), 6.85-6.90 (2H, m), 7.04-7.10 (1H, m), 7.31-7.34 (1H, m)
II-54		1.23 (6H, s), 1.29 (3H, t, $J=7.3$ ), 2.68 (2H, s), 2.72 (6H, s), 4.07 (2H, s), 4.22 (2H, q, $J=7.3$ ), 4.49 (2H, s), 6.98-7.10 (4H, m)
II-55		1.27 (6H, s), 1.33 (3H, t, $J=7.3$ ), 2.73 (2H, s), 3.01 (6H, s), 4.10 (2H, s), 4.25 (2H, q, $J=7.3$ ), 4.54 (2H, s), 6.41 (1H, d, $J=2.3$ ), 6.48 (1H, d, $J=7.6$ ), 6.60 (1H, dd, $J=7.6, 2.3$ ), 7.20 (1H, d, $J=7.6$ )
II-56		1.16 (6H, t, $J=7.3$ ), 1.21 (6H, s), 1.28 (3H, t, $J=7.3$ ), 2.68 (2H, s), 3.35 (4H, q, $J=7.3$ ), 4.05 (2H, s), 4.19 (2H, q, $J=7.3$ ), 4.48 (2H, s), 6.29 (1H, d, $J=2.3$ ), 6.32 (1H, d, $J=8.6$ ), 6.50 (1H, dd, $J=8.6, 2.3$ ), 7.20 (1H, d, $J=8.6$ )
II-57		1.21 (6H, s), 1.22 (3H, t, $J=7.6$ ), 1.46 (9H, s), 2.65 (2H, q, $J=7.6$ ), 2.69 (2H, s), 3.96 (2H, s), 4.48 (2H, s), 6.97 (2H, d, $J=8.3$ ), 7.20 (2H, d, $J=8.3$ )
II-58		1.21 (6H, s), 1.25 (6H, d, $J=6.9$ ), 1.56 (9H, s), 2.69 (2H, s), 2.90 (1H, sept, $J=6.9$ ), 3.97 (2H, s), 4.48 (2H, s), 6.85-6.90 (2H, m), 7.04-7.10 (1H, m), 7.31-7.34 (1H, m)
II-59		1.21 (6H, s), 1.56 (9H, s), 2.67 (2H, s), 2.69 (6H, s), 3.96 (2H, s), 4.47 (2H, s), 6.98-7.10 (4H, m)
II-60		1.21 (6H, s), 1.47 (9H, s), 2.68 (2H, s), 2.96 (6H, s), 3.96 (2H, s), 4.48 (2H, s), 6.36 (1H, d, $J=7.6$ ), 6.37 (1H, d, $J=2.3$ ), 6.55 (1H, dd, $J=7.6, 2.3$ ), 7.20 (1H, d, $J=7.6$ )

表 5.8

化合物番号	物性	
No	融点	NMR ( $\text{CDCl}_3$ )
II-61		1.16 (6H, t, $J=7.3$ ), 1.21 (6H, s), 1.57 (9H, s), 2.68 (2H, s), 3.35 (4H, q, $J=7.8$ ), 3.93 (2H, s), 4.48 (2H, s), 6.29 (1H, d, $J=2.3$ ), 6.32 (1H, d, $J=8.6$ ), 6.50 (1H, dd, $J=8.6, 2.3$ ), 7.20 (1H, d, $J=8.6$ )
II-62		1.15 (6H, t, $J=7.2$ ), 1.22 (6H, s), 2.65 (2H, s), 3.31 (4H, q, $J=7.3$ ), 3.93-3.97 (2H, m), 4.49 (2H, s), 5.15-5.19 (1H, m), 5.28-5.39 (1H, m), 5.86-6.01 (1H, m), 6.28 (1H, d, $J=2.2$ ), 6.32 (1H, d, $J=8.6$ ), 6.50 (1H, dd, $J=8.6, 2.2$ ), 7.20 (1H, d, $J=8.6$ )
II-63		0.97 (6H, t, $J=7.2$ ), 1.22 (6H, s), 2.15 (3H, s), 2.64 (2H, s), 2.97 (4H, q, $J=7.3$ ), 3.93-3.97 (2H, m), 4.49 (2H, s), 5.15-5.19 (1H, m), 5.28-5.39 (1H, m), 5.86-6.01 (1H, m), 6.64 (1H, d, $J=7.9$ ), 6.90 (1H, d, $J=7.9$ ), 7.15 (1H, d, $J=7.9$ )
II-64		1.22 (6H, s), 2.16 (3H, s), 2.64 (2H, s), 2.68 (6H, s), 3.93-3.97 (2H, m), 4.49 (2H, s), 5.15-5.19 (1H, m), 5.28-5.39 (1H, m), 5.86-6.01 (1H, m), 6.63 (1H, d, $J=7.9$ ), 6.85 (1H, d, $J=7.9$ ), 7.12 (1H, d, $J=7.9$ )
II-65		0.88 (6H, t, $J=7.3$ ), 1.43-1.65 (4H, m), 2.60 (2H, s), 2.70 (6H, s), 3.94 (2H, d, $J=6.9$ ), 4.43 (2H, s), 5.16 (2H, d, $J=10.2$ ), 5.31 (1H, dd, $J=16.8, 1.3$ ), 5.86-6.01 (1H, m), 6.93-7.03 (3H, m), 7.08-7.14 (1H, m)
II-66		0.87 (6H, t, $J=7.3$ ), 1.47 (9H, s), 1.48-1.63 (4H, m), 2.62 (2H, s), 2.70 (6H, s), 3.96 (2H, s), 4.43 (2H, s), 6.92-7.14 (4H, m)
II-67		0.88 (6H, t, $J=7.6$ ), 1.47-1.65 (4H, m), 2.60 (2H, s), 3.82 (3H, s), 3.92-3.95 (2H, m), 4.48 (2H, s), 5.14-5.19 (1H, m), 5.32 (1H dd, $J=16.8, 1.3$ ), 5.87-6.00 (1H, m), 6.93-7.00 (3H, m), 7.10-7.17 (1H, m)
II-68		0.87 (6H, t, $J=7.6$ ), 1.47 (9H, s), 1.51-1.60 (4H, m), 2.63 (2H, s), 3.83 (3H, s), 3.96 (2H, s), 4.47 (2H, s), 6.93-7.03 (3H, m), 7.10-7.14 (1H, m)
II-69		0.86 (6H, t, $J=7.6$ ), 1.24 (3H, t, $J=7.6$ ), 1.41-1.65 (4H, m), 2.61-2.71 (4H, m), 3.94 (2H, d, $J=7.3$ ), 4.45 (2H, s), 5.16 (1H, d, $J=9.9$ ), 5.28-5.34 (1H, m), 5.86-6.01 (1H, m), 6.94-6.98 (1H, m), 7.18-7.21 (2H, m)
II-70		0.88 (6H, t, $J=7.6$ ), 1.47 (9H, s), 1.49-1.58 (4H, m), 2.61-2.70 (4H, m), 3.97 (2H, s), 4.45 (2H, s), 6.96-6.99 (2H, m), 7.18-7.21 (2H, m)

表 5 9

化合物番号	物性	
No	融点	NMR ( $\text{CDCl}_3$ )
II-71		0.89 (6H, t, $J=7.6$ ), 1.47-1.65 (4H, m), 2.64 (2H, s), 3.94 (2H, d, $J=7.3$ ), 4.45 (2H, s), 5.18 (1H, d, $J=9.9$ ), 5.32 (1H, dd, $J=17.2$ , 1.3), 5.86-6.01 (1H, m), 7.01-7.06 (2H, m), 7.20-7.23 (2H, m)
II-72		0.88 (6H, t, $J=7.3$ ), 1.47 (9H, s), 1.48-1.66 (4H, m), 2.67 (2H, s), 3.97 (2H, s), 4.44 (2H, s), 7.03-7.08 (2H, m), 7.20-7.26 (2H, m)
II-73	103.5-104.5	0.88 (6H, t, $J=7.3$ ), 1.50-1.63 (4H, m), 2.62 (2H, s), 2.72 (6H, s), 3.43 (3H, s), 4.43 (2H, s), 5.45 (2H, s), 6.95-7.18 (4H, m)
II-74		1.20 (6H, d, $J=6.9$ ), 1.60-1.87 (8H, m), 2.74 (2H, s), 3.10 (1H, sept, $J=6.9$ ), 3.93-3.96 (2H, m), 5.15 (1H, dd, $J=9.9$ , 1.3), 5.31 (1H, dd, $J=17.1$ , 1.3), 5.86-6.01 (1H, m), 6.90-9.94 (1H, m), 7.12-7.20 (2H, m), 7.31-7.34 (1H, m)
II-75		1.62-1.86 (8H, m), 2.72 (6H, s), 3.92-3.95 (2H, m), 4.55 (2H, s), 5.15 (1H, d, $J=10.0$ ), 5.26-5.33 (1H, m), 5.86-5.98 (1H, m), 6.93-7.01 (3H, m), 7.09-7.16 (1H, m)
II-76		1.47 (9H, s), 1.64-1.76 (8H, m), 2.71 (6H, s), 2.76 (2H, s), 3.95 (2H, s), 4.54 (2H, s), 6.92-7.05 (3H, m), 7.09-7.15 (1H, m)
II-77	85.5-87.5	1.20 (6H, d, $J=6.9$ ), 1.60-1.84 (8H, m), 2.79 (2H, s), 3.09 (1H, sept, $J=6.9$ ), 3.40 (3H, s), 3.61-3.64 (2H, m), 4.09 (2H, s), 4.29-4.32 (2H, m), 4.52 (2H, s), 6.92-6.95 (1H, m), 7.13-7.20 (2H, m), 7.31-7.34 (1H, m)
II-78		1.19 (6H, d, $J=6.9$ ), 1.60-1.87 (8H, m), 2.23 (3H, s), 2.76 (2H, s), 3.06 (1H, sept, $J=6.9$ ), 4.53 (2H, s), 4.57 (2H, s), 6.09 (1H, s), 6.87-6.92 (1H, m), 7.13-7.20 (2H, m), 7.29-7.34 (1H, m)
II-79		1.64-1.84 (8H, m), 2.75 (2H, s), 3.83 (3H, s), 3.93 (2H, d, $J=6.9$ ), 4.56 (2H, s), 5.16 (1H, d, $J=9.9$ ), 5.31 (1H, dd, $J=17.1$ , 1.7), 5.87-5.99 (1H, m), 6.92-7.01 (3H, m), 7.11-7.18 (1H, m)
II-80		1.47 (9H, s), 1.64-1.83 (8H, m), 2.78 (2H, s), 3.84 (3H, s), 3.96 (2H, s), 4.55 (2H, s), 6.92-7.04 (3H, m), 7.11-7.18 (1H, m)

表 6 0

化合物番号	物性	
No	融点	NMR ( $\text{CDCl}_3$ )
II-81		1.57-1.86 (8H, m), 2.73 (6H, s), 2.74 (2H, s), 3.42 (3H, s), 4.55 (2H, s), 5.44 (2H, s), 6.94-7.04 (3H, m), 7.11-7.17 (1H, m)
II-82		1.24 (3H, t, $J=7.6$ ), 1.65-1.87 (8H, m), 2.65 (2H, m), 3.93-3.95 (2H, m), 4.54 (2H, m), 5.16 (1H, d, $J=9.9$ ), 5.27-5.35 (1H, m), 5.86-6.01 (1H, m), 6.93-6.98 (2H, m), 7.19-7.22 (1H, m)
II-83		1.55-1.84 (8H, m), 2.77 (2H, s), 3.92-3.95 (2H, m), 4.55 (2H, s), 5.18 (1H, d, $J=9.9$ ), 5.28-5.35 (1H, m), 5.86-6.01 (1H, m), 7.01-7.06 (2H, m), 7.22 (2H, d, $J=8.9$ )
II-84		1.37-1.60 (8H, m), 1.73-1.86 (2H, m), 2.65 (2H, s), 2.70 (6H, s), 3.94 (2H, d, $J=7.3$ ), 4.52 (2H, s), 5.15 (1H, d, $J=9.9$ ), 5.30 (1H, dd, $J=17.2$ , 1.3), 5.86-6.01 (1H, m), 6.93-7.15 (4H, m)
II-85		1.36-1.62 (8H, m), 1.47 (9H, s), 1.69-1.82 (2H, m), 2.67 (2H, s), 2.70 (6H, s), 3.79 (2H, s), 4.52 (2H, s), 6.93-7.14 (4H, m)
II-86	108.5-109.5	1.33-1.62 (8H, m), 1.75-1.82 (2H, m), 2.65 (2H, s), 3.82 (3H, s), 3.94 (2H, d, $J=6.9$ ), 4.56 (2H, s), 5.15 (1H, d, $J=10.2$ ), 5.31 (1H, dd, $J=17.2$ , 1.6), 5.88-6.02 (1H, m), 6.93-7.02 (3H, m), 7.10-7.17 (1H, m)
II-87		1.23-1.78 (10H, m), 1.46 (9H, s), 2.67 (2H, s), 3.83 (3H, s), 3.97 (2H, s), 4.55 (2H, s), 6.89-7.05 (3H, m), 7.10-7.17 (12H, m)
II-88	98-100	1.24 (3H, t, $J=7.6$ ), 1.36-1.54 (8H, m), 1.76-1.81 (2H, m), 2.61-2.69 (4H, m), 3.94 (2H, d, $J=6.9$ ), 4.53 (2H, s), 5.16 (1H, d, $J=9.9$ ), 5.27-5.34 (1H, m), 5.86-5.98 (1H, m), 6.95-6.98 (2H, m), 7.18-7.21 (2H, m)
II-89		1.20 (6H, d, $J=6.9$ ), 1.37-1.90 (16H, m), 2.66 (2H, s), 3.10 (1H, sept, $J=6.9$ ), 3.47-3.59 (3H, m), 3.69-4.06 (3H, m), 4.45 (1H, d, $J=13.9$ ), 4.59 (1H, d, $J=13.9$ ), 4.65-4.68 (1H, m), 6.90-6.93 (1H, m), 7.12-7.19 (2H, m), 7.29-7.34 (1H, m)
II-90		1.20 (6H, d, $J=6.9$ ), 1.30-1.60 (8H, m), 1.72-1.83 (2H, m), 2.04 (2H, brs), 2.67 (2H, s), 3.09 (1H, sept, $J=6.9$ ), 3.56 (2H, t, $J=5.9$ ), 3.93 (2H, brs), 4.51 (2H, s), 6.91-6.94 (1H, m), 7.13-7.21 (2H, m), 7.29-7.34 (1H, m)

表 6 1

化合物番号	物性	
No	融点	NMR ( $\text{CDCl}_3$ )
II-91		1.30-1.63 (8H, m), 1.75-1.82 (2H, m), 2.68 (2H, s), 3.93-3.96 (2H, m), 4.54 (2H, s), 5.17 (1H, dd, $J=9.9, 1.3$ ), 5.28-5.35 (1H, m), 5.86-6.01 (1H, m), 7.01-7.07 (2H, m), 7.20-7.23 (2H, m)
II-92	73.5-75.0	1.20 (6H, d, $J=6.9$ ), 1.58-1.67 (2H, m), 1.89-1.95 (2H, m), 2.73 (2H, s), 3.09 (1H, sept, $J=6.6$ ), 3.94 (2H, d, $J=7.3$ ), 4.66 (2H, s), 5.18 (1H, d, $J=9.9$ ), 5.29-5.36 (1H, m), 5.87-5.98 (1H, m), 7.15-7.19 (2H, m), 7.31-7.35 (1H, m)
II-93	127-128	1.21 (6H, d, $J=6.6$ ), 1.55-1.67 (2H, m), 1.89-1.97 (2H, m), 2.65 (3H, s), 2.74 (2H, s), 3.09 (1H, sept, $J=6.6$ ), 3.69-3.76 (4H, m), 4.69 (2H, s), 6.89-6.92 (1H, m), 7.13-7.21 (2H, m), 7.30-7.35 (1H, m)
II-94		0.90 (6H, t, $J=7.3$ ), 1.20 (6H, d, $J=7.3$ ), 1.48-1.62 (4H, m), 2.69 (2H, s), 3.05 (1H, sept, $J=7.3$ ), 4.16 (2H, s), 4.38 (2H, s), 4.97 (1H, brs), 6.92-6.96 (1H, m), 7.13-7.21 (2H, m), 7.32-7.36 (1H, m)
II-95	98-99	1.23 (6H, s), 2.65 (2H, s), 4.00 (2H, d, $J=6.9$ ), 4.58 (2H, s), 5.19 (1H, d, $J=6.9$ ), 5.35 (1H, dd, $J=17.2, 1.3$ ), 5.90-6.03 (1H, m), 7.09 (1H, d, $J=7.3$ ), 7.42-7.53 (3H, m), 7.67 (1H, d, $J=8.2$ ), 7.85 (1H, dd, $J=7.3, 3.0$ ), 8.05 (1H, d, $J=6.9$ )
II-96	120-121	1.23 (6H, s), 1.49 (9H, s), 2.69 (2H, s), 4.01 (2H, s), 4.57 (2H, s), 7.11 (1H, d, $J=8.2$ ), 7.42-7.51 (3H, m), 7.67 (1H, d, $J=8.2$ ), 7.84-7.87 (1H, m), 8.06 (1H, d, $J=7.6$ )
II-97		1.23 (6H, s), 2.69 (2H, s), 3.40 (3H, s), 3.61-3.65 (2H, m), 4.15 (2H, s), 4.30-4.33 (2H, m), 4.56 (2H, s), 7.11 (1H, dd, $J=7.3, 1.0$ ), 7.42-7.54 (3H, m), 7.67 (1H, d, $J=8.2$ ), 7.84-7.88 (1H, m), 8.04 (1H, dd, $J=6.9, 3.3$ )
II-98	99-100	0.92 (6H, t, $J=7.3$ ), 1.22-1.60 (4H, m), 2.62 (2H, s), 4.00 (2H, s), 4.54 (2H, s), 5.19 (1H, d, $J=9.9$ ), 5.35 (1H, dd, $J=17.2, 1.7$ ), 5.93-6.03 (1H, m), 7.09 (1H, d, $J=7.3$ ), 7.42-7.52 (3H, m), 7.66 (1H, d, $J=8.2$ ), 7.83-7.86 (1H, m), 8.06 (1H, d, $J=7.9$ )
II-99	111-113	0.90 (6H, t, $J=6.9$ ), 1.16-1.56 (4H, m), 1.49 (9H, s), 2.65 (2H, s), 4.02 (2H, s), 4.54 (2H, s), 7.10-7.12 (1H, m), 7.42-7.53 (3H, m), 7.66 (1H, d, $J=8.2$ ), 7.83-7.86 (1H, m), 8.05-8.08 (1H, m)
II-100	86-87	0.90 (6H, t, $J=7.3$ ), 1.43-1.66 (4H, m), 2.63 (2H, s), 4.00 (2H, d, $J=6.9$ ), 4.54 (2H, s), 5.20 (2H, d, $J=9.9$ ), 5.35 (1H, dd, $J=16.8, 1.3$ ), 5.90-6.05 (1H, m), 7.15-7.18 (1H, m), 7.38 (1H, dd, $J=8.6, 4.3$ ), 7.69 (1H, dd, $J=8.6, 7.3$ ), 7.92 (1H, d, $J=8.6$ ), 8.45 (1H, d, $J=7.3$ ), 8.93 (1H, dd, $J=4.3, 1.7$ )

表 6 2

化合物番号	物性	
	No	融点
II-101	103-104	1.59-1.84 (8H, m), 2.74 (2H, s), 3.97 (2H, d, $J=6.9$ ), 4.61 (2H, s), 5.17 (1H, d, $J=10.2$ ), 5.32 (1H, dd, $J=16.8, 1.3$ ), 5.88-6.01 (1H, m), 7.08 (1H, d, $J=8.2$ ), 7.41-7.52 (3H, m), 7.60 (1H, d, $J=8.2$ ), 7.84 (1H, dd, $J=7.3, 2.6$ ), 8.02 (1H, d, $J=6.6$ )
II-102		1.49 (9H, s), 1.54-1.90 (8H, m), 2.79 (2H, s), 4.00 (2H, s), 4.61 (2H, s), 7.11 (1H, dd, $J=7.6, 1.3$ ), 7.42-7.53 (3H, m), 7.67 (1H, d, $J=8.2$ ), 7.84-7.89 (1H, m), 8.02-8.06 (1H, m)
II-103		1.58-1.85 (8H, m), 2.77 (2H, s), 3.99 (2H, d, $J=7.3$ ), 4.62 (2H, s), 5.19 (1H, d, $J=8.9$ ), 5.31-5.38 (1H, m), 5.91-6.04 (1H, m), 7.17 (1H, d, $J=7.6$ ), 7.39 (1H, dd, $J=8.6, 4.3$ ), 7.66-7.73 (1H, m), 7.93 (1H, d, $J=8.6$ ), 8.42 (1H, d, $J=8.6$ ), 8.93 (1H, dd, $J=4.3, 2.0$ )
II-104	109-110	1.33-1.84 (10H, m), 2.66 (2H, s), 4.00 (2H, d, $J=6.9$ ), 4.63 (2H, s), 5.19 (1H, d, $J=9.9$ ), 5.35 (1H, dd, $J=16.8, 1.3$ ), 5.91-6.06 (1H, m), 7.10 (1H, d, $J=7.3$ ), 7.42-7.52 (3H, m), 7.66 (1H, d, $J=8.2$ ), 7.83-7.86 (1H, m), 8.06 (1H, d, $J=7.3$ )
II-105		1.30-1.63 (8H, m), 1.72-1.84 (2H, m), 2.68 (2H, s), 4.00 (2H, d, $J=6.9$ ), 4.62 (2H, s), 5.20 (1H, d, $J=9.9$ ), 5.35 (1H, dd, $J=16.8, 1.3$ ), 5.92-6.04 (1H, m), 7.17 (1H, d, $J=6.9$ ), 7.38 (1H, dd, $J=8.6, 4.3$ ), 7.66-7.72 (1H, m), 7.93 (1H, d, $J=8.6$ ), 8.45 (1H, d, $J=8.6$ ), 8.93 (1H, dd, $J=4.3, 1.7$ )
II-106		1.15 (6H, s), 1.22 (6H, d, $J=6.9$ ), 2.67 (2H, s), 3.02 (1H, sept, $J=6.9$ ), 4.08 (2H, s), 6.77-6.80 (1H, m), 7.07-7.18 (2H, m), 7.28-7.31 (1H, m), 7.77 (1H, dd, $J=8.6, 2.6$ ), 8.11 (1H, d, $J=8.9$ ), 8.57-8.58 (1H, m)
II-107	121.5-122.5	1.23 (6H, d, $J=6.9$ ), 1.27 (6H, s), 2.80 (2H, s), 3.17 (1H, sept, $J=6.9$ ), 4.36 (2H, s), 6.80-6.84 (1H, m), 7.13-7.23 (3H, m), 7.32-7.42 (2H, m), 7.70-7.79 (2H, m)
II-108	158.5-159.5	1.20 (6H, s), 1.27 (6H, d, $J=6.9$ ), 2.72 (2H, s), 3.29 (1H, sept, $J=6.9$ ), 3.99 (2H, s), 6.80-6.84 (1H, m), 7.09-7.39 (6H, m), 7.53-7.56 (1H, m)
II-109		1.16 (6H, s), 1.23 (6H, d, $J=6.9$ ), 2.67 (2H, s), 3.00 (1H, sept, $J=6.9$ ), 4.19 (2H, s), 6.79-6.83 (1H, m), 7.11-7.21 (2H, m), 7.30-7.34 (1H, m), 8.18 (1H, d, $J=9.2$ ), 8.32 (1H, dd, $J=9.2, 2.6$ ), 9.17 (1H, d, $J=2.6$ )
II-110		0.94 (2H, t, $J=7.3$ ), 1.14 (6H, s), 1.57-1.71 (2H, m), 2.57 (2H, t, $J=7.3$ ), 2.67 (2H, s), 4.09 (2H, s), 6.81-6.87 (2H, m), 7.08-7.16 (2H, m), 7.75 (1H, dd, $J=8.9, 2.6$ ), 8.09 (1H, d, $J=8.9$ ), 8.55 (1H, s)

表 6 3

化合物番号	物性	
No	融点	N M R (CHCl <sub>3</sub> )
II-111		0.88 (6H, t, J=7.4), 1.22 (6H, d, J=6.9), 1.42-1.52 (4H, m), 2.61 (2H, s), 3.06 (1H, sept, J=6.9), 4.11 (2H, s), 6.75-6.80 (1H, m), 7.07-7.18 (2H, m), 7.29-7.34 (1H, m), 7.75 (1H, dd, J=8.6, 2.6), 8.08 (1H, d, J=8.9), 8.57-8.58 (1H, m)
II-112		1.20 (6H, d, J=6.9), 1.28 (6H< s), 2.85 (2H, s), 2.95 (1H, sept, J=6.9), 4.34 (2H, s), 6.72-6.79 (1H, m), 7.14-7.20 (2H, m), 7.31-7.36 (1H, m)
II-113	120-121	1.19 (6H, d, J=6.9), 1.58-1.66 (2H, m), 1.88-1.98 (2H, m), 2.38-2.60 (4H, m), 2.64 (3H, s), 2.69 (2H, s), 3.08 (1H, sept, J=6.9), 3.52 (2H, s), 4.59 (2H, s), 6.89-6.92 (1H, m), 7.12-7.34 (8H, m)
II-114		0.89 (6H, t, J=7.3), 1.43-1.65 (4H, m), 2.49 (3H, s), 2.62 (2H, s), 3.93-3.96 (2H, m), 4.45 (2H, s), 5.17 (1H, m), 5.31 (1H, m), 5.89 (1H, m), 6.80 (1H, m), 6.91 (1H, m), 7.04 (1H, m), 7.24-7.30 (2H, m)
II-115		1.57-1.88 (8H, m), 2.49 (3H, s), 2.75 (2H, s), 3.95 (2H, m), 4.55 (2H, s), 5.17 (1H, m), 5.32 (1H, m), 5.93 (1H, m), 6.80 (1H, m), 6.91 (1H, m), 7.05 (1H, m), 7.29 (1H, m)
II-116		1.32-1.60 (8H, m), 1.72-1.84 (2H, m), 2.49 (3H, s), 2.66 (2H, s), 3.95 (2H, m), 4.54 (2H, s), 5.17 (1H, d, J=10.2), 5.32 (1H, dd, J=17.2, 1.3), 5.89 (1H, m), 6.80 (1H, m), 6.91 (1H, m), 7.04 (1H, m), 7.28 (1H, m)
II-117		1.65-1.86 (8H, m), 2.49 (3H, s), 2.75 (2H, s), 3.93 (2H, m), 4.54 (2H, s), 5.17 (1H, m), 5.31 (1H, m), 5.89 (1H, m), 6.96-7.01 (2H, m), 7.26-7.31 (2H, m)
II-118	111-112	1.37-1.63 (8H, m), 1.73-1.84 (2H, m), 2.49 (3H, s), 2.67 (2H, s), 3.94 (2H, m), 4.53 (2H, s), 5.17 (1H, d, J=10.2), 5.31 (1H, dd, J=17.2, 1.7), 5.92 (1H, m), 6.97-7.01 (2H, m), 7.26-7.30 (2H, m)
II-119		1.22 (6H, s), 1.25 (3H, t, J=6.9), 2.62 (2H, s), 2.65 (2H, q, J=6.9), 3.81(3H, s ), 3.95 (2H, m), 4.50 (2H, s), 5.17 (1H, m), 5.29 (1H, m), 5.94 (1H, m), 6.80-6.84 (2H, m), 6.93 (1H, m).
II-120		1.22 (6H, s), 1.24 (6H, d, J=6.9), 2.64 (2H, s), 2.89 (1H, sept, J=6.9), 3.82 (3H, s ), 3.95 (2H, m), 4.49 (2H, s), 5.17 (1H, m), 5.28 (1H, m), 5.94 (1H, m), 6.89-6.94 (2H, m), 6.93 (1H, m).
II-121		1.18 (6H, d, J=6.9), 1.22 (6H, s), 2.64 (2H, s), 3.10 (1H, sept, J=6.9), 3.81 (3H、 s ), 3.95 (2H, m), 4.47 (2H, s), 5.17 (1H, m), 5.28 (1H, m), 5.97 (1H, m), 6.72 (1H, m), 6.85-6.95 (2H, m).
II-122		1.17 (6H, d, J=6.9), 1.22 (6H, s), 1.43 (3H, t, J=7.5), 2.65 (2H, s), 3.05 (1H, sept, J=6.9), 3.95 (2H, m), 4.05 (2H, q, J=7.5), 4.46 (2H, s), 5.17 (1H, m), 5.28 (1H, m), 5.97 (1H, m), 6.72 (1H, m), 6.85-6.90 (2H, m).

表 6 4

化合物番号	物性	
No	融点	NMR ( $\text{CDCl}_3$ )
II-123		1.22 (6H, s), 1.45 (6H, t, $J=7.4$ ), 2.64 (2H, s), 3.95 (2H, m), 4.10 (4H, q, $J=7.4$ ), 4.48 (2H, s), 5.17 (1H, m), 5.28 (1H, m), 5.97 (1H, m), 6.55-6.63 (2H, m), 6.88 (1H, m).
II-124		1.05 (6H, t, $J=7.4$ ), 1.22 (6H, s), 1.78-1.86 (4H, m), 2.66 (2H, s), 3.93 (4H, q, $J=7.4$ ), 3.95 (2H, m), 4.48 (2H, s), 5.17 (1H, m), 5.28 (1H, m), 5.97 (1H, m), 6.55-6.68 (2H, m), 6.88 (1H, m).
II-125	86-88	1.23 (6H, s), 1.45 (3H, t, $J=7.4$ ), 2.67 (2H, s), 3.22 (3H, s), 3.95 (2H, m), 4.12 (2H, q, $J=7.4$ ), 4.47 (2H, s), 5.17 (1H, m), 5.28 (1H, m), 5.97 (1H, m), 6.95-6.99 (2H, m), 7.12 (1H, m).
II-126	65-66	1.22 (6H, s), 1.25 (3H, t, $J=6.9$ ), 2.65 (2H, s), 3.54 (2H, q, $J=6.9$ ), 3.95 (2H, m), 4.49 (2H, s), 5.17 (1H, m), 5.28 (1H, m), 5.97 (1H, m), 6.99 (2H, d, $J=7.9$ ), 7.34 (2H, d, $J=7.9$ ).
II-127		0.88 (6H, t, $J=7.4$ ), 1.45 (3H, t, $J=7.4$ ), 1.44-1.58 (4H, m), 2.62 (2H, s), 3.80 (3H, s), 3.95 (2H, m), 4.11 (2H, q, $J=7.4$ ), 4.45 (2H, s), 5.17 (1H, m), 5.28 (1H, m), 5.97 (1H, m), 6.50-6.65 (2H, m), 6.88 (1H, m).
II-128		0.88 (6H, t, $J=7.4$ ), 1.45 (6H, t, $J=7.4$ ), 1.44-1.58 (4H, m), 2.62 (2H, s), 3.95 (2H, m), 4.11 (4H, q, $J=7.4$ ), 4.45 (2H, s), 5.17 (1H, m), 5.28 (1H, m), 5.97 (1H, m), 6.55-6.65 (2H, m), 6.88 (1H, m).
II-129	62-64	0.88 (6H, t, $J=7.4$ ), 1.04 (3H, t, $J=7.4$ ), 1.43 (3H, t, $J=7.4$ ), 1.44-1.58 (4H, m), 1.86 (2H, sext, $J=7.4$ ), 2.62 (2H, s), 3.21 (3H, s), 3.95 (2H, m), 3.98 (2H, t, $J=7.4$ ), 4.10 (2H, q, $J=7.4$ ), 4.49 (2H, s), 5.13 (1H, m), 5.28 (1H, m), 5.97 (1H, m), 6.55-6.65 (2H, m), 6.88 (1H, m).
II-130	104-105	0.88 (6H, t, $J=7.4$ ), 1.06 (3H, t, $J=7.4$ ), 1.44-1.58 (4H, m), 1.86 (2H, sext, $J=7.4$ ), 2.62 (2H, s), 3.21 (3H, s), 3.95 (2H, m), 3.98 (2H, t, $J=7.4$ ), 4.43 (2H, s), 5.13 (1H, m), 5.28 (1H, m), 5.97 (1H, m), 6.84-6.88 (2H, m), 7.13 (1H, m).
II-131	70-72	0.88 (6H, t, $J=7.4$ ), 1.04 (6H, t, $J=7.4$ ), 1.44-1.58 (4H, m), 1.86 (4H, m), 2.64 (2H, s), 3.95 (2H, m), 3.98 (2H, t, $J=7.4$ ), 4.49 (2H, s), 5.13 (1H, m), 5.28 (1H, m), 5.97 (1H, m), 6.55-6.65 (2H, m), 6.88 (1H, m).
II-132	59-60	0.88 (6H, t, $J=7.4$ ), 1.04 (3H, t, $J=7.4$ ), 1.35 (6H, d, $J=6.9$ ), 1.44-1.58 (4H, m), 1.79 (2H, sext, $J=7.4$ ), 2.62 (2H, s), 3.95 (2H, m), 3.98 (2H, t, $J=7.4$ ), 4.46 (1H, sept, $J=6.9$ ), 4.46 (2H, s), 5.13 (1H, m), 5.28 (1H, m), 5.97 (1H, m), 6.52-6.61 (2H, m), 6.88 (1H, m).
II-133		1.22 (6H, s), 2.30 (6H, s), 2.51-2.60 (2H, m), 2.65 (2H, s), 2.81-2.88 (2H, m), 3.95 (2H, m), 4.49 (2H, s), 5.17 (1H, m), 5.28 (1H, m), 5.97 (1H, m), 6.98 (2H, d, $J=7.9$ ), 7.20 (2H, d, $J=7.9$ ).

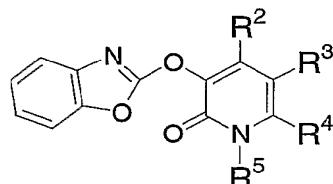
表 6 5

化合物番号	物性	
No	融点	NMR ( $\text{CDCl}_3$ )
II-134		1.20 (6H, d, $J=6.9$ ), 1.32-1.60 (8H, m), 1.47 (9H, s), 1.70-1.81 (2H, m), 2.70 (2H, s), 3.09 (1H, sept, $J=6.9$ ), 3.97 (2H, s), 4.52 (2H, s), 6.95 (1H, m), 7.11-7.20 (2H, m), 7.31 (1H, m)
II-135		1.20 (6H, d, $J=6.9$ ), 1.58-1.68 (2H, m), 1.93-1.97 (2H, m), 2.31 (3H, s), 2.38-2.59 (4H, m), 2.64 (3H, s), 2.68 (2H, s), 3.09 (1H, sept, $J=6.9$ ), 4.59 (2H, s), 6.91 (1H, m), 7.13-7.21 (2H, m), 7.33 (1H, m)
II-136		1.11 (3H, t, $J=6.9$ ), 1.20 (6H, d, $J=6.9$ ), 1.65-1.70 (2H, m), 1.94-2.00 (2H, m), 2.41-2.50 (4H, m), 2.56-2.69 (2H, m), 2.65 (3H, s), 2.69 (2H, s), 3.09 (1H, sept, $J=6.9$ ), 4.60 (2H, s), 6.91 (1H, m), 7.13-7.21 (2H, m), 7.33 (1H, m)
II-137	67-68	1.22 (6H, s), 2.65 (2H, s), 3.93-3.97 (2H, m), 4.45 (2H, s), 5.17 (1H, m), 5.28 (1H, m), 5.97 (1H, m), 6.85-6.91 (2H, m), 7.02 (1H, m).
II-138	80-82	1.22 (6H, s), 2.66 (2H, s), 3.95 (2H, m), 4.46 (2H, s), 5.17 (1H, m), 5.28 (1H, m), 5.97 (1H, m), 6.85 (1H, dd, $J=8.2, 2.0$ ), 7.16 (1H, d, $J=2.0$ ), 7.44 (1H, d, $J=8.2$ ).
II-139		1.22 (6H, s), 2.21 (3H, s), 2.64 (2H, s), 3.93-3.97 (2H, m), 4.51 (2H, s), 5.17 (1H, m), 5.28 (1H, m), 5.97 (1H, m), 6.85 (1H, d, $J=8.2$ ), 7.16 (1H, dd, $J=8.2, 2.0$ ), 7.22 (1H, d, $J=2.0$ ).
II-140		1.22 (6H, s), 2.30 (3H, s), 2.64 (2H, s), 3.95 (2H, m), 4.51 (2H, s), 5.17 (1H, m), 5.28 (1H, m), 5.97 (1H, m), 6.89 (1H, d, $J=8.2$ ), 7.16 (1H, dd, $J=8.2, 2.0$ ), 7.30 (1H, d, $J=2.0$ ).
II-141		1.22 (6H, s), 2.65 (2H, s), 2.88 (2H, t, $J=7.1$ ), 3.36 (3H, s), 3.66 (2H, t, $J=7.1$ ), 3.95 (2H, m), 4.49 (2H, s), 5.17 (1H, m), 5.28 (1H, m), 5.97 (1H, m), 6.98 (2H, d, $J=8.3$ ), 7.20 (2H, d, $J=8.3$ ).
II-142		1.25 (6H, d, $J=6.9$ ), 1.55-1.87 (8H, m), 2.72 (2H, s), 2.91 (1H, sept, $J=6.9$ ), 3.93 (2H, m), 4.54 (2H, s), 5.16 (1H, m), 5.30 (1H, m), 5.93 (1H, m), 6.95-7.00 (2H, m), 7.21-7.24 (2H, m)
II-143		1.25 (6H, d, $J=6.9$ ), 1.47 (9H, s), 1.63-1.85 (8H, m), 2.78 (2H, s), 2.91 (1H, sept, $J=6.9$ ), 3.95 (2H, s), 4.53 (2H, ), 6.96-7.01 (2H, m), 7.20-7.24 (2H, m)

表 6 6

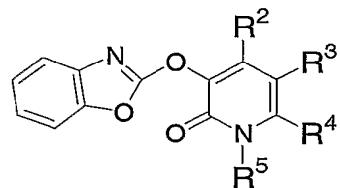
化合物番号	物性	
No	融点	NMR ( $\text{CDCl}_3$ )
II-144		0.88 (6H, t, $J=7.3$ ), 1.25 (6H, d, $J=6.9$ ), 1.43-1.68 (4H, m), 2.61 (2H, s), 2.90 (1H, sept, $J=6.9$ ), 3.94 (2H, m), 4.45 (2H, s), 5.15 (1H, m), 5.31 (1H, m), 5.94 (1H, m), 6.95-6.99 (2H, m), 7.20-7.24 (2H, m)
II-145		0.87 (6H, t, $J=7.3$ ), 1.25 (6H, d, $J=6.9$ ), 1.47 (9H, s), 1.48-1.70 (4H, m), 2.65 (2H, s), 2.90 (1H, sept, $J=6.9$ ), 3.96 (2H, s), 4.44 (2H, s), 6.97-7.01 (2H, m), 7.20-7.23 (2H, m)
II-146	90.5-92.5	1.25 (6H, d, $J=6.9$ ), 1.30-1.62 (8H, m), 1.73-1.85 (2H, m), 2.66 (2H, s), 2.91 (1H, sept, $J=6.9$ ), 3.94 (2H, m), 4.54 (2H, s), 5.16 (1H, dd, $J=9.9, 1.3$ ), 5.31 (1H, m), 5.94 (1H, m), 6.96-7.00 (2H, m), 7.20-7.24 (2H, m)
II-147		0.90 (6H, t, $J=6.9$ ), 1.15-1.57 (8H, m), 1.47 (9H, s), 2.64 (2H, s), 3.83 (3H, s), 3.96 (2H, s), 4.46 (2H, s), 6.92-6.97 (2H, m), 7.02 (1H, dd, $J=7.9, 1.6$ ), 7.13 (1H, m)
II-148		1.00 (6H, d, $J=6.9$ ), 1.06 (6H, d, $J=6.9$ ), 1.46 (9H, s), 2.01 (2H, sept, $J=6.9$ ), 2.80 (2H, s), 3.82 (3H, s), 3.87 (2H, s), 4.66 (2H, s), 6.91-7.01 (3H, m), 7.13 (1H, m)
II-149		0.92 (6H, t, $J=7.3$ ), 1.16-1.54 (8H, m), 2.61 (2H, s), 3.82 (3H, s), 3.94 (2H, dd, $J=6.9, 1.0$ ), 4.47 (2H, s), 5.16 (1H, m), 5.32 (1H, m), 5.94 (1H, m), 6.92-7.01 (3H, m), 7.13 (1H, m)
II-150		0.85 (3H, t, $J=7.3$ ), 1.18 (3H, d, $J=6.9$ ), 1.47-1.68 (4H, m), 1.90-2.00 (2H, m), 2.31 (3H, s), 2.39-2.63 (4H, m), 2.65 (3H, s), 2.69 (2H, d, $J=2.8$ ), 2.89 (1H, sext, $J=7.3$ ), 4.46 (1H, d, $J=13.8$ ), 4.71 (1H, d, 13.8), 6.92 (1H, m), 7.12-7.29 (3H, m)
II-151		1.37-1.63 (8H, m), 1.48 (9H, s), 1.70-1.83 (2H, m), 2.67 (2H, s), 4.02 (2H, s), 4.62 (2H, s), 7.11 (1H, dd, $J=7.6, 1.3$ ), 7.42-7.53 (3H, m), 7.67 (1H, d, $J=8.2$ ), 7.85 (1H, dd, $J=6.9, 3.3$ ), 8.07 (1H, m)
II-152		0.88 (6H, t, $J=7.3$ ), 1.44-1.65 (4H, m), 1.49 (9H, s), 2.65 (2H, s), 4.02 (2H, s), 4.54 (2H, s), 7.11 (1H, dd, $J=7.3, 1.0$ ), 7.42-7.53 (3H, m), 7.67 (1H, d, $J=8.2$ ), 7.85 (1H, dd, $J=5.6, 3.3$ ), 8.07 (1H, dd, $J=7.3, 3.3$ )
II-153		1.21 (6H, d, $J=6.9$ ), 1.58-1.67 (2H, m), 2.31 (3H, s), 2.33 (3H, s), 2.41-2.45 (4H, m), 2.67 (2H, s), 3.13 (1H, sept, $J=6.9$ ), 3.89 (2H, s), 6.80 (1H, m), 7.10-7.18 (2H, m), 7.31 (1H, m)
II-154		0.85 (3H, t, $J=7.3$ ), 1.19 (3H, d, $J=7.3$ ), 1.47-1.81 (6H, m), 2.31 (3H, s), 2.32 (3H, s), 2.40-2.50 (4H, m), 2.67 (2H, s), 2.92 (1H, sext, $J=7.3$ ), 3.84 (1H, d, $J=13.9$ ), 6.80 (1H, m), 7.11-7.17 (2H, m), 7.25 (1H, m)

表 6 7



化合物 No.	R <sup>2</sup>	R <sup>3</sup>	R <sup>4</sup>	R <sup>5</sup>	<sup>1</sup> H-NMR (CDCl <sub>3</sub> )
1-001	H	Me	Me	Me	2.16 (s, 3H), 2.33 (s, 3H), 3.62 (s, 3H), 7.17-7.26 (m, 2H), 7.34 (s, 1H), 7.34-7.43 (m, 1H), 7.46-7.50 (m, 1H).
1-002	H	Me	Me	Et	1.82 (t, J = 7.2 Hz, 3H), 2.15 (s, 3H), 2.36 (s, 3H), 4.19 (q, J = 7.2 Hz, 2H), 7.19-7.25 (m, 2H), 7.34 (s, 1H), 7.39-7.42 (m, 1H), 7.46-7.49 (m, 1H).
1-003	H	Me	Me	nPr	0.98 (t, J = 7.2 Hz, 3H), 1.65-1.78 (m, 2H), 2.15 (s, 3H), 2.34 (s, 3H), 4.03-4.08 (m, 2H), 7.16-7.26 (m, 2H), 7.33 (s, 1H), 7.38-7.41 (m, 1H), 7.46-7.49 (m, 1H).
1-004	H	Me	Me	nBu	0.95 (t, J = 7.5 Hz, 3H), 1.35-1.48 (m, 2H), 1.62-1.72 (m, 2H), 2.15 (s, 3H), 2.35 (s, 3H), 4.10 (t, J = 7.8 Hz, 2H), 7.19-7.25 (m, 2H), 7.33 (s, 1H), 7.38-7.42 (m, 1H), 7.46-7.49 (m, 1H).
1-005	H	Me	Me	Bn	2.14 (s, 3H), 2.25 (s, 3H), 5.42 (br s, 2H), 7.17-7.51 (m, 10H).
1-006	H		H	nBu	0.94 (t, J = 7.4 Hz, 3H), 1.35-1.48 (m, 2H), 1.76-1.86 (m, 2H), 4.06 (t, J = 7.4 Hz, 2H), 7.22-7.28 (m, 3H), 7.34-7.51 (m, 7H), 7.81 (d, J = 2.5 Hz, 1H).
1-007	H		H	nBu	0.96 (t, J = 7.3 Hz, 3H), 1.35-1.48 (m, 2H), 1.75-1.85 (m, 2H), 4.05 (t, J = 7.3 Hz, 2H), 7.10-7.17 (m, 2H), 7.22-7.24 (m, 3H), 7.37-7.44 (m, 3H), 7.48-7.52 (m, 1H), 7.76 (d, J = 2.7 Hz, 1H).
1-008	H		H	nBu	0.97 (t, J = 7.3 Hz, 3H), 1.36-1.49 (m, 2H), 1.79-1.87 (m, 2H), 4.08 (t, J = 7.3 Hz, 2H), 7.23-7.27 (m, 2H), 7.37-7.44 (m, 2H), 7.45-7.52 (m, 1H), 7.50 (d, J = 2.7 Hz, 1H), 7.75-7.78 (m, 1H), 7.81 (d, J = 2.7 Hz, 1H), 8.61 (d, J = 3.7 Hz, 1H), 8.74 (s, 1H).

表 6 8

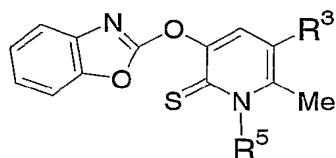


化合物 No.	R <sup>2</sup>	R <sup>3</sup>	R <sup>4</sup>	R <sup>5</sup>	<sup>1</sup> H-NMR (CDCl <sub>3</sub> )
1-009	H		H	nBu	0.97 (t, <i>J</i> = 7.4 Hz, 3H), 1.38-1.48 (m, 2H), 1.75-1.85 (m, 2H), 4.05 (t, <i>J</i> = 7.4 Hz, 2H), 6.92 (s, 1H), 7.23-7.52 (m, 6H), 7.67-7.69 (m, 2H), 7.71 (d, <i>J</i> = 2.7 Hz, 1H), 7.89 (d, <i>J</i> = 2.7 Hz, 1H).
1-010	Me	H	Me	nBu	0.94 (t, <i>J</i> = 7.5 Hz, 3H), 1.39 (sextet, <i>J</i> = 7.5 Hz, 2H), 1.61-1.71 (m, 2H), 2.21 (s, 3H), 2.37 (s, 3H), 3.99 (t, <i>J</i> = 7.8 Hz, 2H), 5.95 (s, 1H), 7.18 (ddd, <i>J</i> = 7.5, 7.5, 1.8 Hz), 7.23 (ddd, <i>J</i> = 7.5, 7.5, 1.8 Hz, 1H), 7.40 (m, 1H), 7.47 (m, 1H).
1-011		H	Me	nBu	0.94 (t, <i>J</i> = 7.5 Hz, 3H), 1.37 (sextet, <i>J</i> = 7.5 Hz, 2H), 1.68-1.78 (m, 2H), 1.73 (d, <i>J</i> = 1.0 Hz, 3H), 3.32 (s, 2H), 3.94 (t, <i>J</i> = 7.5 Hz, 2H), 4.82 (s, 1H), 4.88 (s, 1H), 6.18 (d, <i>J</i> = 7.2 Hz, 1H), 7.17 (d, <i>J</i> = 7.2 Hz, 1H), 7.19 (ddd, <i>J</i> = 7.5, 7.5, 1.5 Hz, 1H), 7.23 (ddd, <i>J</i> = 7.5, 7.5, 1.5 Hz, 1H), 7.40 (m, 1H), 7.48 (m, 1H).

表 6 9

化合物 No.	構造	<sup>1</sup> H-NMR (CDCl <sub>3</sub> )
1-012		2.16 (s, 3H), 2.36 (s, 3H), 7.20-7.29 (m, 2H), 7.40-7.44 (m, 1H), 7.58-7.61 (m, 1H), 7.83 (s, 1H).
1-013		0.95 (t, J = 7.2 Hz), 1.85-1.48 (m, 2H), 1.60-1.72 (m, 2H), 2.15 (s, 3H), 2.39 (s, 3H), 4.11 (t, J = 7.8 Hz, 2H), 7.22-7.29 (m, 2H), 7.41-7.44 (m, 1H), 7.57-7.61 (m, 1H), 7.81 (s, 1H).
1-014		0.96 (t, J = 7.2 Hz, 6H), 1.30-1.60 (m, 4H), 1.60-1.75 (m, 2H), 1.76-1.90 (m, 2H), 2.81 (s, 3H), 3.89 (t, J = 6.9 Hz, 2H), 4.02 (t, J = 8.1 Hz, 2H), 5.88 (d, J = 7.8 Hz, 1H), 6.52 (d, J = 7.2 Hz, 1H).
1-015		0.94 (t, J = 7.5 Hz, 3H), 1.40 (sextet, J = 7.5 Hz, 2H), 1.66 (quint, J = 7.5 Hz, 2H), 1.74 (quint, J = 6.0 Hz, 2H), 1.87 (quint, J = 6.0 Hz, 2H), 2.58 (t, J = 6.0 Hz, 2H), 2.69 (t, J = 6.0 Hz, 2H), 4.02 (t, J = 7.8 Hz, 2H), 7.16-7.26 (m, 2H), 7.24 (s, 1H), 7.40 (dd, J = 6.9 Hz, 2.4 Hz, 1H), 7.48 (dd, J = 6.9 Hz, 2.4 Hz, 1H).
1-016		0.96 (t, J = 7.5 Hz, 3H), 1.42 (sextet, J = 7.5 Hz, 2H), 1.60-1.76 (m, 4H), 1.81 (quint, J = 6.0 Hz, 2H), 2.43 (t, J = 6.0 Hz, 2H), 2.61 (t, J = 6.0 Hz, 2H), 4.01 (t, J = 7.8 Hz, 2H), 5.07 (s, 2H), 6.43 (s, 1H), 7.28-7.39 (m, 1H), 7.34 (d, J = 7.5 Hz, 2H), 7.45 (d, J = 7.5 Hz, 2H).
1-017		3.23 (t, J = 7.5 Hz, 2H), 4.24 (t, J = 7.5 Hz, 2H), 6.10 (t, J = 6.9 Hz, 1H), 6.99 (dd, J = 1.8, 6.9 Hz, 1H), 7.08-7.29 (m, 5H), 7.42-7.45 (m, 1H), 7.49-7.52 (m, 2H), 7.56 (dd, J = 1.2, 7.8 Hz, 1H).
1-018		3.03 (t, J = 6.1 Hz, 2H), 4.34 (t, J = 6.1 Hz, 2H), 6.74 (d, J = 7.9 Hz, 1H), 7.19-7.45 (m, 6H), 7.50 (d, J = 6.4 Hz, 1H), 7.61 (d, J = 7.9 Hz, 1H), 7.73 (d, J = 7.3 Hz, 1H).
1-019		0.96 (t, J = 7.5 Hz, 3H), 1.41 (sextet, J = 7.5 Hz, 2H), 1.58-1.73 (m, 4H), 1.81 (quint, J = 6.0 Hz, 2H), 2.45 (t, J = 6.0 Hz, 2H), 2.61 (t, J = 6.0 Hz, 2H), 3.18 (t, J = 7.5 Hz, 2H), 4.00 (t, J = 7.8 Hz, 2H), 4.07 (t, J = 7.5 Hz, 2H), 6.34 (s, 1H), 7.21-7.33 (m, 5H).

表 7 0



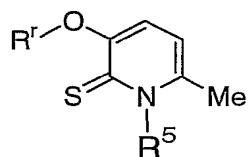
化合物 No.	R <sup>3</sup>	R <sup>5</sup>	<sup>1</sup> H-NMR (CDCl <sub>3</sub> )
2-001	Me	Me	2.28 (s, 3H), 2.49 (s, 3H), 4.17 (s, 3H), 7.19-7.24 (m, 2H), 7.40 (s, 1H), 7.43-7.49 (m, 2H).
2-002	Me	Et	1.46 (t, <i>J</i> = 7.2 Hz, 3H), 2.25 (s, 3H), 2.55 (s, 3H), 4.92 (br s, 2H), 7.18-7.24 (m, 2H), 7.37 (s, 1H), 7.42-7.49 (m, 2H).
2-003	Me	nPr	1.04 (t, <i>J</i> = 7.2 Hz, 3H), 1.89 (br s, 2H), 2.25 (s, 3H), 2.52 (s, 3H), 4.71 (br s, 2H), 7.19-7.26 (m, 2H), 7.36 (s, 1H), 7.42-7.49 (m, 2H).
2-004	Me	nBu	0.99 (t, <i>J</i> = 7.2 Hz, 3H), 1.42-1.54 (m, 2H), 1.83 (br s, 2H), 2.25 (s, 3H), 2.53 (s, 3H), 4.80 (br s, 2H), 7.18-7.26 (m, 2H), 7.36 (s, 1H), 7.42-7.49 (m, 2H).
2-005	Me	iBu	0.97-0.99 (m, 6H), 2.27 (s, 3H), 2.51 (s, 3H), 2.51-2.66 (m, 1H), 3.81 (br s, 1H), 5.64 (br s, 1H), 7.20-7.24 (m, 2H), 7.39 (s, 1H), 7.42-7.48 (m, 2H).
2-006	Me	nPent	0.92 (t, <i>J</i> = 7.2 Hz, 3H), 1.36-1.48 (m, 4H), 1.85 (br s, 2H), 2.25 (s, 3H), 2.53 (s, 3H), 4.76 (br s, 2H), 7.18-7.26 (m, 2H), 7.36 (s, 1H), 7.42-7.49 (m, 2H).
2-007	Me	nHexyl	0.89 (t, <i>J</i> = 7.2 Hz, 3H), 1.30-1.50 (m, 6H), 1.84 (br s, 2H), 2.25 (s, 3H), 2.52 (s, 3H), 4.79 (br s, 2H), 7.17-7.26 (m, 2H), 7.35 (s, 1H), 7.42-7.49 (m, 2H).
2-008	Me	Bn	2.24 (s, 3H), 2.38 (s, 3H), 6.27 (br s, 2H), 7.14-7.52 (m, 10H).
2-009	Et	Me	1.23 (t, <i>J</i> = 7.8 Hz, 3H), 2.50 (s, 3H), 2.61 (q, <i>J</i> = 7.8 Hz, 2H), 4.17 (s, 3H), 7.19-7.24 (m, 2H), 7.42 (s, 1H), 7.42-7.49 (m, 2H).
2-010	Et	Et	1.23 (t, <i>J</i> = 7.5 Hz, 3H), 1.47 (t, <i>J</i> = 7.2 Hz, 3H), 2.57 (s, 3H), 2.59 (q, <i>J</i> = 7.5 Hz, 2H), 4.92 (br s, 2H), 7.18-7.24 (m, 2H), 7.39 (s, 1H), 7.43-7.49 (m, 2H).
2-011	Et	nPr	1.04 (t, <i>J</i> = 7.2 Hz, 3H), 1.22 (t, <i>J</i> = 7.5 Hz, 3H), 1.89 (br s, 2H), 2.54 (s, 3H), 2.59 (q, <i>J</i> = 7.5 Hz, 2H), 4.72 (br s, 2H), 7.18-7.24 (m, 2H), 7.38 (s, 1H), 7.42-7.49 (m, 2H).
2-012	Et	nBu	0.99 (t, <i>J</i> = 7.2 Hz, 3H), 1.22 (t, <i>J</i> = 7.5 Hz, 3H), 1.42-1.54 (m, 2H), 1.83 (br s, 2H), 2.55 (s, 3H), 2.59 (q, <i>J</i> = 7.5 Hz, 2H), 4.77 (br s, 2H), 7.20-7.24 (m, 2H), 7.38 (s, 1H), 7.42-7.49 (m, 2H).
2-013	Et	Bn	1.22 (t, <i>J</i> = 7.5 Hz, 3H), 2.40 (s, 3H), 2.57 (q, <i>J</i> = 7.5 Hz, 2H), 6.26 (br s, 2H), 7.13-7.51 (m, 10H).

表 7 1



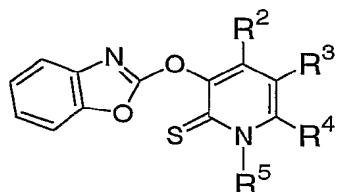
化合物 No.	R <sup>r</sup>	R <sup>5</sup>	<sup>1</sup> H-NMR (CDCl <sub>3</sub> )
2-014		Me	2.55 (s, 3H), 4.10 (s, 3H), 6.57 (d, J = 7.8 Hz, 1H), 7.20-7.26 (m, 2H), 7.40-7.50 (m, 3H).
2-015		nBu	0.99 (t, J = 7.2 Hz, 3H), 1.47 (sextet, J = 7.5 Hz, 2H), 1.84 (m, 2H), 2.58 (s, 3H), 4.69 (br s, 2H), 6.52 (d, J = 7.8 Hz, 1H), 7.20-7.26 (m, 2H), 7.30-7.50 (m, 3H).
2-016		nBu	0.82 (t, J = 7.5 Hz, 3H), 1.32 (sextet, J = 7.5 Hz, 2H), 1.47-1.52 (m, 2H), 2.46 (s, 3H), 4.37 (br s, 2H), 4.80 (s, 2H), 7.06 (d, J = 9.0 Hz, 1H), 7.26-7.35 (m, 3H), 7.38-7.44 (m, 1H), 7.60-7.67 (m, 1H).
2-017	Ac	nBu	0.99 (t, J = 7.5 Hz, 3H), 1.47 (sextet, J = 7.5 Hz, 2H), 1.83 (m, 2H), 2.38 (s, 3H), 2.54 (s, 3H), 4.70 (br s, 2H), 6.44 (d, J = 7.8 Hz, 1H), 7.04 (d, J = 7.5 Hz, 1H).
2-018	H	nBu	1.02 (t, J = 7.8 Hz, 3H), 1.50 (sextet, J = 7.8 Hz, 2H), 1.80-1.90 (m, 2H), 2.51 (s, 3H), 4.66 (br s, 2H), 6.49 (d, J = 8.1 Hz, 1H), 6.91 (d, J = 7.8 Hz, 1H), 8.44 (br s, 1H).
2-019		nBu	0.96 (t, J = 7.5 Hz, 3H), 1.41 (sextet, J = 7.5 Hz, 2H), 1.70 (m, 2H), 2.43 (s, 3H), 2.52 (s, 3H), 4.61 (brs, 2H), 6.38 (d, J = 8.1 Hz, 1H), 7.26-7.35 (m, 3H), 7.97 (d, J = 8.7 Hz, 1H).
2-020	H <sub>3</sub> C-SO <sub>2</sub> -	nBu	1.01 (t, J = 7.5 Hz, 3H), 1.49 (sextet, J = 7.2 Hz, 2H), 1.82 (m, 2H), 2.57 (s, 3H), 3.48 (dd, J = 3.0, 1.5 Hz, 3H), 4.70 (brs, 2H), 6.47 (d, J = 7.8 Hz, 1H), 7.31 (dd, J = 7.8, 1.8 Hz, 1H).
2-021		nBu	0.98 (t, J = 7.2 Hz, 3H), 1.46 (sextet, J = 7.5 Hz, 2H), 1.81 (m, 2H), 2.51 (s, 3H), 4.00 (s, 2H), 4.67 (brs, 2H), 6.39 (d, J = 7.8 Hz, 1H), 6.98 (d, J = 7.8 Hz, 1H), 7.10-7.50 (m, 5H).
2-022		nBu	0.99 (t, J = 7.2 Hz, 3H), 1.47 (sextet, J = 7.2 Hz, 2H), 1.85 (m, 2H), 2.54 (s, 3H), 2.90-3.00 (m, 2H), 3.10-3.20 (m, 2H), 4.70 (brs, 2H), 3.10-3.20 (m, 2H), 4.70 (brs, 2H), 6.42 (d, J = 8.1 Hz, 1H), 6.97 (d, J = 8.1 Hz, 1H), 7.18-7.34 (m, 5H).

表 7 2



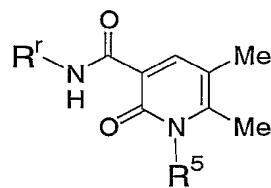
化合物 No.	R <sup>r</sup>	R <sup>5</sup>	<sup>1</sup> H-NMR (CDCl <sub>3</sub> )
2-023		nBu	0.92 (t, <i>J</i> = 6.9 Hz, 3H), 1.37 (m, 4H), 2.41 (s, 3H), 4.17 (brs, 2H), 4.47 (s, 2H), 6.99 (d, <i>J</i> = 9.0 Hz, 1H), 7.00-7.30 (m, 5H).
2-024		nBu	0.94 (t, <i>J</i> = 6.9 Hz, 3H), 1.40 (sextet, <i>J</i> = 7.8 Hz, 2H), 1.70 (m, 2H), 2.48 (s, 3H), 2.89 (s, 6H), 4.60 (br s, 2H), 6.27 (d, <i>J</i> = 8.1 Hz, 1H), 6.97 (dd, <i>J</i> = 8.1, 1.2 Hz, 1H), 7.21 (d, <i>J</i> = 7.8 Hz, 1H), 7.51 (dd, <i>J</i> = 8.1, 7.8 Hz, 1H), 7.61 (dd, <i>J</i> = 8.4, 7.8 Hz, 1H), 8.28 (dd, <i>J</i> = 7.2, 0.9 Hz, 1H), 8.61 (t, <i>J</i> = 8.4 Hz, 2H).
2-025		nBu	1.02 (t, <i>J</i> = 7.5 Hz, 3H), 1.50 (sextet, <i>J</i> = 7.5 Hz, 2H), 1.80-1.85 (m, 2H), 2.51 (s, 3H), 4.67 (br s, 2H), 6.51 (dd, <i>J</i> = 5.1, 4.8 Hz, 1H), 6.57 (d, <i>J</i> = 7.8 Hz, 1H), 7.38 (d, <i>J</i> = 8.1 Hz, 1H), 7.70-7.85 (m, 2H).
2-026	nBu	nBu	0.90-1.03 (m, 6H), 1.4-1.6 (m, 4H), 1.8-1.9 (m, 4H), 2.50 (s, 3H), 3.98 (t, <i>J</i> = 6.9 Hz, 2H), 4.76 (brs, 2H), 6.40 (d, <i>J</i> = 8.1 Hz, 1H), 6.60 (d, <i>J</i> = 7.8 Hz, 1H).
2-027		nBu	0.91 (t, <i>J</i> = 7.2 Hz, 3H), 1.25-1.44 (m, 4H), 1.25-1.44 (m, 4H), 2.40 (s, 3H), 3.75 (s, 3H), 4.18 (brs, 2H), 4.44 (s, 2H), 6.73 (A <sub>2</sub> B <sub>2</sub> -type, <i>J</i> = 8.7 Hz, 2H), 6.98 (d, <i>J</i> = 9.8 Hz, 1H), 7.09 (A <sub>2</sub> B <sub>2</sub> -type, <i>J</i> = 8.4 Hz, 2H), 7.25 (d, <i>J</i> = 9.0 Hz, 1H).
2-028	EtO <sub>2</sub> C-	nBu	0.99 (t, <i>J</i> = 7.2 Hz, 3H), 1.40 (t, <i>J</i> = 7.2 Hz, 3H), 1.47 (sextet, <i>J</i> = 7.5 Hz, 2H), 1.84 (m, 2H), 2.55 (s, 3H), 4.35 (q, <i>J</i> = 7.5 Hz, 2H), 4.69 (brs, 2H), 6.45 (dd, <i>J</i> = 7.5, 0.6 Hz, 1H), 7.12 (d, <i>J</i> = 7.5 Hz, 1H).
2-029		nBu	0.99 (t, <i>J</i> = 7.2 Hz, 3H), 1.48 (sextet, <i>J</i> = 7.2 Hz, 2H), 1.85 (m, 2H), 2.57 (s, 3H), 4.73 (brs, 2H), 6.48 (d, <i>J</i> = 7.8 Hz, 1H), 7.18 (d, <i>J</i> = 7.5 Hz, 1H), 7.20-7.70 (m, 3H), 8.20-8.30 (m, 2H).

表 7 3



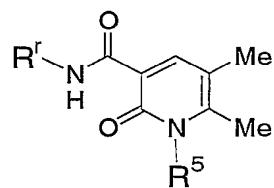
化合物 No.	R <sup>2</sup>	R <sup>3</sup>	R <sup>4</sup>	R <sup>5</sup>	<sup>1</sup> H-NMR (CDCl <sub>3</sub> )
2-030	H	H	H	iPr	1.45 (s, 3H), 1.48 (s, 3H), 6.31-6.45 (m, 1H), 6.76 (t, J = 7.0 Hz, 1H), 7.03-7.29 (m, 3H), 7.43-7.29 (m, 3H), 7.43-7.54 (m, 2H), 7.74 (dd, J = 1.5, 7.0 Hz, 1H).
2-031	Me	H	H	nPr	1.00 (t, J = 7.3 Hz, 3H), 1.83-2.02 (m, 2H), 4.48 (t, J = 7.7 Hz, 2H), 6.56 (d, J = 6.6 Hz, 1H), 7.20-7.28 (m, 2H), 7.43-7.49 (m, 2H), 7.57 (d, J = 6.6 Hz, 1H).
2-032	-CH <sub>2</sub> OMe	H	H	nPr	0.96 (t, J = 7.8 Hz, 3H), 1.35-1.47 (m, 2H), 1.81-1.91 (m, 2H), 3.43 (s, 3H), 4.48-4.56 (m, 3H), 6.89 (d, J = 6.7 Hz, 1H), 6.97-7.48 (m, 4H), 7.68 (d, J = 6.7 Hz, 1H).
2-033	H	H	H	nBu	0.98 (t, J = 7.3 Hz, 3H), 1.37-1.49 (m, 2H), 1.83-1.94 (m, 2H), 4.57 (t, J = 7.6 Hz, 2H), 6.65-6.70 (m, 1H), 7.22-7.27 (m, 2H), 7.43-7.51 (m, 3H), 7.68 (dd, J = 1.5, 6.4 Hz, 1H).
2-034	Me	H	H	nBu	0.95 (t, J = 7.3 Hz, 3H), 1.34-1.46 (m, 2H), 1.79-1.90 (m, 2H), 2.29 (s, 3H), 4.51 (t, J = 7.4 Hz, 2H), 6.55 (d, J = 6.6 Hz, 1H), 7.20-7.28 (m, 2H), 7.43-7.48 (m, 2H), 7.59 (d, J = 6.6 Hz, 1H).
2-035	H	Me	H	nBu	0.97 (t, J = 7.3 Hz, 3H), 1.36-1.46 (m, 2H), 1.82-1.92 (m, 2H), 4.54 (t, J = 7.6 Hz, 2H), 7.19-7.27 (m, 2H), 7.40-7.52 (m, 4H).
2-036	H	Br	H	nBu	0.99 (t, J = 7.5 Hz, 3H), 1.43 (sextet, J = 7.5 Hz, 2H), 1.83-1.93 (m, 2H), 4.53 (t, J = 7.5 Hz, 2H), 7.21-7.30 (m, 2H), 7.42-7.52 (m, 2H), 7.64 (d, J = 2.1 Hz, 1H), 7.79 (d, J = 2.1 Hz, 1H).
2-037	H		H	nBu	1.00 (t, J = 7.3 Hz, 3H), 1.45 (sextet, J = 7.3 Hz, 2H), 1.85-1.97 (m, 2H), 4.57 (t, J = 7.6 Hz, 2H), 7.22-7.28 (m, 2H), 7.34-7.44 (m, 3H), 7.44-7.52 (m, 4H), 7.61 (d, J = 1.8 Hz, 1H), 7.89 (d, J = 1.8 Hz, 1H).

表 7 4



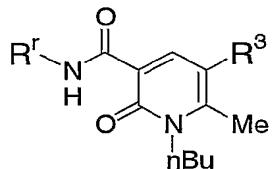
化合物 No.	R <sup>r</sup>	R <sup>5</sup>	<sup>1</sup> H-NMR (CDCl <sub>3</sub> )
3-001		Me	2.20 (s, 3H), 2.39 (s, 3H), 3.62 (s, 3H), 4.65 (d, J = 6.0 Hz, 2H), 7.21-7.38 (m, 5H), 8.37 (s, 1H), 10.28 (br s, 1H).
3-002		Me	2.19 (s, 3H), 2.38 (s, 3H), 2.93 (t, J = 7.2 Hz, 2H), 3.62 (s, 3H), 3.65-3.72 (m, 2H), 7.21-7.33 (m, 5H), 8.34 (s, 1H), 9.99 (br s, 1H).
3-003		Et	1.82 (t, J = 7.2 Hz, 3H), 2.18 (s, 3H), 2.42 (s, 3H), 4.20 (q, J = 7.2 Hz, 2H), 4.64 (d, J = 6.0 Hz, 2H), 7.24-7.38 (m, 5H), 8.35 (s, 1H), 10.30 (br s, 1H).
3-004		Et	1.83 (t, J = 7.2 Hz, 3H), 2.18 (s, 3H), 2.42 (s, 3H), 2.93 (t, J = 7.5 Hz, 2H), 3.64-3.71 (m, 2H), 4.21 (q, J = 7.2 Hz, 2H), 7.18-7.33 (m, 5H), 8.32 (s, 1H), 10.03 (br s, 1H).
3-005		nPr	1.08 (t, J = 7.8 Hz, 3H), 1.65-1.78 (m, 2H), 2.19 (s, 3H), 2.42 (s, 3H), 4.07 (t, J = 8.1 Hz, 2H), 4.65 (d, J = 6.0 Hz, 2H), 7.24-7.38 (m, 5H), 8.36 (s, 1H), 10.80 (br s, 1H).
3-006		nPr	1.05 (t, J = 7.5 Hz, 3H), 1.67-1.80 (m, 2H), 2.19 (s, 3H), 2.42 (s, 3H), 2.92-2.97 (m, 2H), 3.64-3.72 (m, 2H), 4.09 (t, J = 7.8 Hz, 2H), 7.20-7.35 (m, 5H), 8.33 (s, 1H), 10.05 (br s, 1H).
3-007		iPr	1.60 (s, 3H), 1.63 (s, 3H), 2.17 (s, 3H), 2.40 (s, 3H), 4.64 (d, J = 6.0 Hz, 3H), 7.24-7.34 (m, 5H), 8.31 (s, 1H), 10.31 (br s, 1H).
3-008		iPr	1.62 (s, 3H), 1.64 (s, 3H), 2.17 (s, 3H), 2.40 (s, 3H), 2.93 (d, J = 7.8 Hz, 2H), 3.62-3.69 (m, 2H), 4.64 (br s, 1H), 7.18-7.33 (m, 5H), 8.28 (s, 1H), 10.04 (br s, 1H).
3-009		nBu	0.98 (t, J = 7.2 Hz, 3H), 1.38-1.51 (m, 2H), 1.61-1.71 (m, 2H), 2.18 (s, 3H), 2.41 (s, 3H), 4.10 (t, J = 8.1 Hz, 2H), 4.64 (d, J = 6.0 Hz, 2H), 7.21-7.38 (m, 5H), 8.35 (s, 1H), 10.30 (br s, 1H).
3-010		nBu	1.00 (t, J = 7.2 Hz, 3H), 1.40 (m, 2H), 1.61-1.72 (m, 2H), 2.98 (t, J = 7.2 Hz, 2H), 3.63-3.70 (m, 2H), 4.11 (t, J = 7.8 Hz, 2H), 7.18-7.32 (m, 5H), 8.32 (s, 1H), 10.03 (br s, 1H).

表 7 5



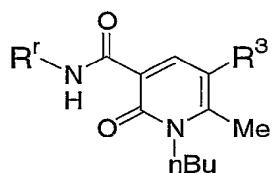
化合物 No.	R <sup>r</sup>	R <sup>5</sup>	<sup>1</sup> H-NMR (CDCl <sub>3</sub> )
3-011		nHexyl	0.89 (t, <i>J</i> = 7.2 Hz, 3H), 1.30-1.50 (m, 6H), 1.60-1.75 (m, 2H), 2.18 (s, 3H), 2.41 (s, 3H), 4.09 (t, <i>J</i> = 7.8 Hz, 2H), 4.64 (d, <i>J</i> = 5.7 Hz, 2H), 7.23-7.38 (m, 5H), 8.35 (s, 1H).
3-012		nHexyl	0.91 (t, <i>J</i> = 6.9 Hz, 3H), 1.32-1.45 (m, 6H), 1.63-1.70 (m, 2H), 2.18 (s, 3H), 2.40 (s, 3H), 2.93 (t, <i>J</i> = 7.5 Hz, 2H), 3.63-3.70 (m, 2H), 4.10 (t, <i>J</i> = 7.8 Hz, 2H), 7.18-7.32 (m, 5H), 8.31 (s, 1H), 10.04 (br s, 1H).
3-013		Bn	2.19 (s, 3H), 2.31 (s, 3H), 4.64 (d, <i>J</i> = 5.7 Hz, 2H), 5.44 (br s, 2H), 7.07-7.38 (m, 10H), 8.44 (s, 1H), 10.24 (br s, 1H).
3-014		Bn	2.18 (s, 3H), 2.31 (s, 3H), 2.93 (t, <i>J</i> = 7.5 Hz, 2H), 3.64-3.71 (m, 2H), 5.45 (br s, 2H), 7.08-7.86 (m, 10H), 8.41 (s, 1H), 9.98 (br s, 1H).
3-015		Ph	2.00 (s, 3H), 2.22 (s, 3H), 4.58 (d, <i>J</i> = 5.7 Hz, 2H), 7.15-7.32 (m, 7H), 7.49-7.58 (m, 3H), 8.49 (s, 1H), 10.02 (br s, 1H).
3-016		Ph	2.00 (s, 3H), 2.22 (s, 3H), 2.88 (t, <i>J</i> = 7.8 Hz, 2H), 3.59-3.66 (m, 2H), 7.16-7.29 (m, 7H), 7.51-7.61 (m, 3H), 8.46 (s, 1H), 9.82 (br s, 1H).

表 7 6



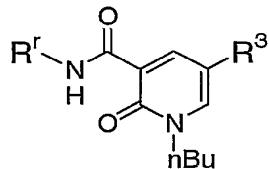
化合物 No.	R <sup>r</sup>	R <sup>3</sup>	<sup>1</sup> H-NMR (CDCl <sub>3</sub> )
3-033		nBu	0.98 (t, <i>J</i> = 7.2 Hz, 3H), 0.98 (t, <i>J</i> = 7.2 Hz, 3H), 1.82-1.51 (m, 6H), 1.61-1.69 (m, 2H), 2.41 (s, 3H), 2.48 (t, <i>J</i> = 7.8 Hz, 2H), 4.09 (t, <i>J</i> = 7.8 Hz, 2H), 4.64 (d, <i>J</i> = 6.0 Hz, 2H), 7.28-7.38 (m, 5H), 8.85 (s, 1H), 10.30 (br s, 1H).
3-034		nBu	0.93 (t, <i>J</i> = 7.2 Hz, 3H), 1.00 (t, <i>J</i> = 7.2 Hz, 3H), 1.80-1.54 (m, 6H), 1.63-1.72 (m, 2H), 2.42 (s, 3H), 2.48 (t, <i>J</i> = 7.8 Hz, 2H), 2.93 (m, 2H), 3.62-3.70 (m, 2H), 4.10 (t, <i>J</i> = 7.8 Hz, 2H), 7.16-7.32 (m, 5H), 8.32 (s, 1H), 10.04 (br s, 1H).
3-035		nPentyl	0.90 (t, <i>J</i> = 6.9 Hz, 3H), 0.98 (t, <i>J</i> = 7.2 Hz, 3H), 1.80-1.53 (m, 8H), 1.62-1.69 (m, 2H), 2.47 (s, 3H), 2.48 (t, <i>J</i> = 7.5 Hz, 2H), 4.09 (t, <i>J</i> = 7.8 Hz, 2H), 4.64 (d, <i>J</i> = 5.7 Hz, 2H), 7.28-7.38 (m, 5H), 8.85 (s, 1H), 10.31 (br s, 1H).
3-036		nPentyl	0.90 (t, <i>J</i> = 6.9 Hz, 3H), 1.00 (t, <i>J</i> = 7.2 Hz, 3H), 1.28-1.39 (m, 4H), 1.40-1.55 (m, 4H), 1.62-1.72 (m, 2H), 2.42 (s, 3H), 2.47 (t, <i>J</i> = 7.5 Hz, 2H), 2.93 (t, <i>J</i> = 7.2 Hz, 2H), 3.63-3.70 (m, 2H), 4.10 (t, <i>J</i> = 7.8 Hz, 2H), 7.20-7.32 (m, 5H), 8.82 (s, 1H), 10.04 (br s, 1H).
3-037		I	0.98 (t, <i>J</i> = 7.3 Hz, 3H), 1.38-1.50 (m, 2H), 1.61-1.71 (m, 2H), 2.71 (s, 3H), 4.16 (t, <i>J</i> = 7.9 Hz, 2H), 4.63 (d, <i>J</i> = 5.8 Hz, 2H), 7.22-7.37 (m, 5H), 8.78 (s, 1H), 10.4 (br s, 1H).
3-038		I	1.00 (t, <i>J</i> = 7.3 Hz, 3H), 1.39-1.51 (m, 2H), 1.59 (s, 3H), 1.61-1.71 (m, 2H), 2.71 (s, 3H), 2.92 (t, <i>J</i> = 7.6 Hz, 2H), 3.62-3.69 (m, 2H), 4.17 (t, <i>J</i> = 7.9 Hz, 2H), 7.19-7.33 (m, 5H), 8.74 (s, 1H), 9.77 (br s, 1H).
3-039			1.00 (t, <i>J</i> = 7.3 Hz, 3H), 1.41-1.53 (m, 2H), 1.68-1.78 (m, 2H), 4.15 (t, <i>J</i> = 7.6 Hz, 2H), 4.65 (d, <i>J</i> = 5.8 Hz, 2H), 7.22-7.45 (m, 10H), 8.46 (s, 1H), 10.25 (br s, 1H).
3-040			1.02 (t, <i>J</i> = 7.3 Hz, 3H), 1.43-1.55 (m, 2H), 1.69-1.79 (m, 2H), 2.41 (s, 3H), 2.94 (t, <i>J</i> = 7.9 Hz, 2H), 3.65-3.72 (m, 2H), 4.16 (t, <i>J</i> = 7.6 Hz, 2H), 7.19-7.45 (m, 10H), 8.48 (s, 1H), 9.98 (br s, 1H).

表 7 7



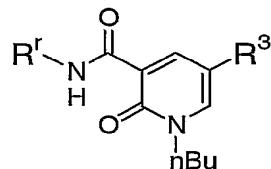
化合物 No.	R <sup>r</sup>	R <sup>3</sup>	<sup>1</sup> H-NMR (CDCl <sub>3</sub> )
3-044		CF <sub>3</sub>	1.02 (t, <i>J</i> = 6.7 Hz, 3H), 1.42-1.54 (m, 2H), 1.66-1.74 (m, 2H), 2.61 (s, 3H), 2.93 (t, <i>J</i> = 7.8 Hz, 2H), 3.64-3.69 (m, 2H), 4.14 (t, <i>J</i> = 7.9 Hz, 2H), 7.20-7.33 (m, 5H), 8.69 (s, 1H), 9.61 (brs, 1H).

表 7 8



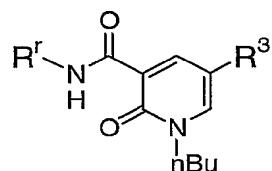
化合物 No.	R <sup>r</sup>	R <sup>s</sup>	<sup>1</sup> H-NMR (CDCl <sub>3</sub> )
3-061	n-Hexyl		0.86-0.91 (m, 6H), 0.95 (t, J = 7.8 Hz, 3H), 1.26-1.47 (m, 16H), 1.54-1.65 (m, 4H), 1.78-1.83 (m, 2H), 3.38-3.45 (m, 4H), 4.07 (t, J = 7.3 Hz, 2H), 6.72 (t, J = 5.5 Hz, 1H), 8.40 (d, J = 2.7 Hz, 1H), 8.83 (d, J = 2.7 Hz, 1H), 9.69 (t, J = 5.5 Hz, 1H).
3-062			1.02 (t, J = 7.3 Hz, 3H), 1.33-1.45 (m, 2H), 1.72-1.82 (m, 2H), 4.06 (t, J = 7.6 Hz, 2H), 4.58 (d, J = 5.5 Hz, 4H), 6.81 (br s, 1H), 7.24-7.36 (m, 10H), 7.42 (d, J = 2.7 Hz, 1H), 8.78 (d, J = 2.7 Hz, 1H), 10.00 (br s, 1H).
3-063			0.97 (t, J = 7.3 Hz, 3H), 1.33-1.46 (m, 2H), 1.72-1.82 (m, 2H), 2.88-2.94 (m, 4H), 3.63-3.72 (m, 4H), 4.06 (t, J = 7.6 Hz, 2H), 7.20-7.34 (m, 10H), 8.37 (d, J = 2.7 Hz, 1H), 8.65 (d, J = 2.7 Hz, 1H), 9.52 (br s, 1H).
3-064			0.91-0.96 (m, 6H), 0.93 (t, J = 7.3 Hz, 3H), 1.32-1.44 (m, 4H), 1.54-1.65 (m, 6H), 1.71-1.81 (m, 2H), 3.38 (br s, 4H), 4.02 (t, J = 7.3 Hz, 2H), 4.64 (d, J = 5.8 Hz, 2H), 7.23-7.39 (m, 5H), 7.85 (d, J = 2.7 Hz, 1H), 8.58 (d, J = 2.7 Hz, 1H), 10.04 (t, J = 5.5 Hz, 1H).
3-065			0.96 (t, J = 7.3 Hz, 3H), 1.15-1.49 (m, 6H), 1.64-1.81 (m, 6H), 1.96-2.05 (m, 2H), 3.87-3.99 (m, 1H), 4.05 (t, J = 7.3 Hz, 2H), 4.64 (d, J = 5.8 Hz, 2H), 6.10 (d, J = 7.9 Hz, 2H), 6.92-7.38 (m, 5H), 8.38 (d, J = 2.7 Hz, 1H), 8.72 (d, J = 2.7 Hz, 1H), 10.05 (t, J = 5.8 Hz, 1H).
3-066			0.89 (t, J = 6.7 Hz, 3H), 0.97 (t, J = 7.3 Hz, 3H), 1.27-1.45 (m, 8H), 1.54-1.63 (m, 2H), 1.73-1.82 (m, 2H), 2.93 (t, J = 7.6 Hz, 2H), 3.38-3.45 (m, 2H), 3.65-3.72 (m, 2H), 4.06 (t, J = 7.6 Hz, 2H), 6.44 (t, J = 5.5 Hz, 1H), 7.20-7.34 (m, 5H), 8.39 (d, J = 2.7 Hz, 1H), 8.74 (d, J = 2.7 Hz, 1H), 9.78 (t, J = 5.5 Hz, 1H).

表 7 9



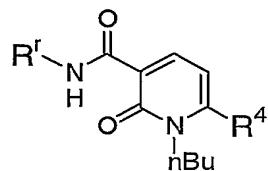
化合物 No.	R <sup>r</sup>	R <sup>3</sup>	<sup>1</sup> H-NMR (CDCl <sub>3</sub> )
3-067		I	0.96 (t, <i>J</i> = 7.3 Hz, 3H), 1.31-1.44 (m, 2H), 1.68-1.78 (m, 2H), 3.95 (t, <i>J</i> = 7.3 Hz, 2H), 4.62 (d, <i>J</i> = 7.3 Hz, 2H), 7.23-7.36 (m, 5H), 7.70 (d, <i>J</i> = 2.6 Hz, 1H), 8.67 (d, <i>J</i> = 2.6 Hz, 1H), 10.03 (br s, 1H).
3-068			0.98 (t, <i>J</i> = 7.3 Hz, 3H), 1.36-1.48 (m, 2H), 1.75-1.85 (m, 2H), 4.08 (t, <i>J</i> = 7.6 Hz, 2H), 4.67 (d, <i>J</i> = 5.8 Hz, 2H), 7.22-7.50 (m, 10H), 7.69 (d, <i>J</i> = 2.7 Hz, 1H), 8.87 (d, <i>J</i> = 2.7 Hz, 1H), 10.25 (br s, 1H).
3-069			0.98 (t, <i>J</i> = 7.6 Hz, 3H), 1.34-1.46 (m, 2H), 1.72-1.82 (m, 2H), 4.01 (t, <i>J</i> = 7.6 Hz, 2H), 4.65 (d, <i>J</i> = 5.8 Hz, 2H), 7.23-7.40 (m, 8H), 7.45-7.51 (m, 2H), 7.73 (d, <i>J</i> = 2.7 Hz, 1H), 8.66 (d, <i>J</i> = 2.7 Hz, 1H), 10.03 (t, <i>J</i> = 5.8 Hz, 1H).
3-070	nBuO	H	0.95 (t, <i>J</i> = 7.5 Hz, 3H), 1.38 (sextet, <i>J</i> = 7.8 Hz, 2H), 1.73-1.79 (m, 2H), 3.90 (s, 3H), 3.98 (t, <i>J</i> = 7.5 Hz, 2H), 6.24 (d, <i>J</i> = 6.9 Hz, 1H), 7.53 (dd, <i>J</i> = 6.7, 2.1 Hz, 1H), 8.14 (dd, <i>J</i> = 7.5, 2.4 Hz, 1H).
3-071		H	0.95 (t, <i>J</i> = 6.9 Hz, 3H), 1.36 (sextet, <i>J</i> = 7.8 Hz, 2H), 1.66-1.80 (m, 2H), 3.96 (t, <i>J</i> = 7.2 Hz, 2H), 4.60 (d, <i>J</i> = 6.0 Hz, 2H), 6.36 (t, <i>J</i> = 7.5 Hz, 1H), 7.20-7.40 (m, 5H), 7.46 (dd, <i>J</i> = 6.3, 2.1 Hz, 1H), 8.47 (dd, <i>J</i> = 7.2, 2.4 Hz, 1H).
3-072		CF <sub>3</sub>	0.99 (t, <i>J</i> = 7.3 Hz, 3H), 1.34-1.47 (m, 2H), 1.72-1.82 (m, 2H), 2.93 (t, <i>J</i> = 7.3 Hz, 2H), 3.66-3.73 (m, 2H), 7.20-7.34 (m, 5H), 7.83 (m, 1H), 8.69 (d, <i>J</i> = 2.7 Hz, 1H), 9.62 (br s, 1H).
3-073			0.99 (t, <i>J</i> = 7.3 Hz, 3H), 1.37-1.49 (m, 2H), 2.95 (t, <i>J</i> = 7.3 Hz, 2H), 3.66-3.73 (m, 2H), 4.07 (t, <i>J</i> = 7.3 Hz, 2H), 7.19-7.31 (m, 6H), 7.84 (d, <i>J</i> = 2.4 Hz, 1H), 7.42 (d, <i>J</i> = 8.5 Hz, 1H), 7.65 (d, <i>J</i> = 2.7 Hz, 1H), 8.63 (dd, <i>J</i> = 2.7, 0.6 Hz, 1H), 9.89 (t, <i>J</i> = 5.8 Hz, 1H).

表 8 0



化合物 No.	R <sup>r</sup>	R <sup>3</sup>	<sup>1</sup> H-NMR (CDCl <sub>3</sub> )
3-074			1.00 (t, <i>J</i> = 7.3 Hz, 3H), 1.38-1.50 (m, 2H), 1.70-1.87 (m, 2H), 2.97 (t, <i>J</i> = 7.3 Hz, 2H), 3.69-3.76 (m, 2H), 4.09 (t, <i>J</i> = 7.3 Hz, 2H), 6.58 (brs, 1H), 7.20-7.84 (m, 6H), 7.44-7.47 (m, 2H), 8.63 (s, 1H), 8.89 (d, <i>J</i> = 2.4 Hz, 1H), 10.11 (t, <i>J</i> = 5.8 Hz, 1H).

表 8 1



化合物 No.	$\text{R}^r$	$\text{R}^4$	$^1\text{H-NMR} (\text{CDCl}_3)$
3-081		Me	0.98 (t, $J = 7.2$ Hz, 3H), 1.43 (sextet, $J = 7.5$ Hz, 2H), 1.60-1.70 (m, 2H), 2.46 (s, 3H), 4.05 (t, $J = 8.1$ Hz, 2H), 4.27 (dd, $J = 7.2, 6.6$ Hz, 1H), 4.64 (d, $J = 5.7$ Hz, 2H), 7.20-7.40 (m, 5H), 8.41 (d, $J = 7.5$ Hz, 1H), 10.2 (br s, 1H).
3-082		nPentyl	0.93 (t, $J = 7.2$ Hz, 3H), 0.98 (t, $J = 7.2$ Hz, 3H), 1.37-1.50 (m, 6H), 1.62-1.70 (m, 4H), 2.67 (t, $J = 7.8$ Hz, 2H), 4.05 (t, $J = 7.8$ Hz, 2H), 4.64 (d, $J = 6.0$ Hz, 2H), 6.27 (d, $J = 7.5$ Hz, 1H), 7.20-7.40 (m, 5H), 8.44 (d, $J = 7.5$ Hz, 1H), 10.21 (br s, 1H).
3-083		nPentyl	0.93 (t, $J = 6.9$ Hz, 3H), 1.00 (t, $J = 7.2$ Hz, 3H), 1.38-1.49 (m, 6H), 1.63-1.70 (m, 4H), 2.66 (t, $J = 7.8$ Hz, 2H), 2.93 (t, $J = 7.5$ Hz, 2H), 3.63-3.68 (m, 2H), 4.06 (t, $J = 7.8$ Hz, 2H), 6.27 (d, $J = 7.5$ Hz, 1H), 7.17-7.32 (m, 5H), 8.40 (d, $J = 7.5$ Hz, 1H), 9.94 (br s, 1H).
3-084		nHexyl	0.91 (t, $J = 7.2$ Hz, 3H), 0.98 (t, $J = 7.2$ Hz, 3H), 1.80-1.50 (m, 8H), 1.60-1.72 (m, 4H), 2.67 (t, $J = 7.8$ Hz, 2H), 4.05 (t, $J = 8.1$ Hz, 2H), 4.64 (d, $J = 5.7$ Hz, 2H), 6.28 (d, $J = 7.8$ Hz, 1H), 7.20-7.40 (m, 5H), 8.44 (d, $J = 7.8$ Hz, 1H), 10.21 (br s, 1H).
3-085		nHexyl	0.91 (t, $J = 7.2$ Hz, 3H), 1.00 (t, $J = 7.2$ Hz, 3H), 1.31-1.49 (m, 8H), 1.61-1.71 (m, 4H), 2.67 (t, $J = 7.8$ Hz, 2H), 2.93 (t, $J = 7.2$ Hz, 2H), 3.63-3.70 (m, 2H), 4.06 (t, $J = 7.8$ Hz, 2H), 6.27 (d, $J = 7.8$ Hz, 1H), 7.18-7.33 (m, 5H), 8.41 (d, $J = 7.8$ Hz, 1H), 9.94 (t, $J = 5.1$ Hz, 1H).

表 8 2

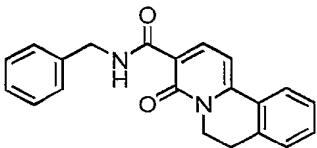
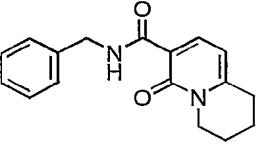
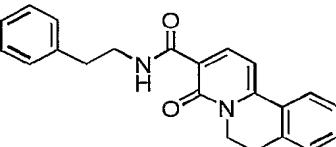
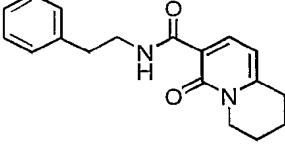
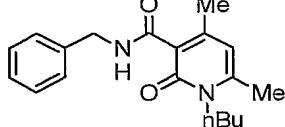
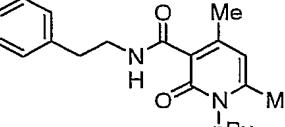
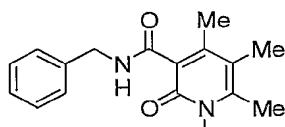
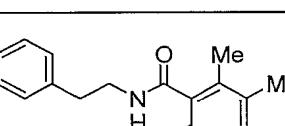
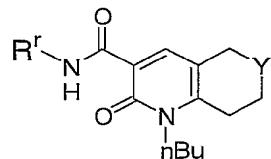
化合物 No.	構造	<sup>1</sup> H-NMR (CDCl <sub>3</sub> )
3-101		3.03 (t, <i>J</i> = 6.4 Hz, 2H), 4.35 (t, <i>J</i> = 6.4 Hz, 2H), 4.68 (d, <i>J</i> = 5.8 Hz, 2H), 6.94 (d, <i>J</i> = 7.9 Hz, 1H), 7.23-7.49 (m, 8H), 7.81 (d, <i>J</i> = 7.3 Hz, 1H), 8.63 (d, <i>J</i> = 7.9 Hz, 1H), 10.22 (br s, 1H).
3-102		1.79-1.88 (m, 2H), 1.95-2.03 (m, 2H), 2.88 (t, <i>J</i> = 6.4 Hz, 2H), 4.04 (t, <i>J</i> = 6.1 Hz, 2H), 4.65 (d, <i>J</i> = 5.8 Hz, 2H), 6.26 (d, <i>J</i> = 7.3 Hz, 1H), 7.20-7.38 (m, 5H), 8.46 (d, <i>J</i> = 7.3 Hz, 1H), 10.19 (br s, 1H).
3-103		2.97 (t, <i>J</i> = 7.3 Hz, 2H), 3.04 (t, <i>J</i> = 6.4 Hz, 2H), 3.68-3.75 (m, 2H), 4.35 (t, <i>J</i> = 6.4 Hz, 2H), 6.92 (d, <i>J</i> = 7.9 Hz, 1H), 7.19-7.35 (m, 5H), 7.87-7.43 (m, 3H), 7.80 (dd, <i>J</i> = 1.5, 7.8 Hz, 1H), 8.59 (d, <i>J</i> = 7.9 Hz, 1H), 9.93 (br s, 1H).
3-104		1.79-1.88 (m, 2H), 1.95-2.04 (m, 2H), 2.87 (t, <i>J</i> = 6.4 Hz, 2H), 2.93 (t, <i>J</i> = 7.3 Hz, 2H), 3.65-3.72 (m, 2H), 4.04 (t, <i>J</i> = 6.4 Hz, 2H), 6.24 (d, <i>J</i> = 7.3 Hz, 1H), 7.18-7.33 (m, 5H), 8.42 (d, <i>J</i> = 7.3 Hz, 1H), 9.90 (br s, 1H).
3-105		0.97 (t, <i>J</i> = 7.5 Hz, 3H), 1.42 (sextet, <i>J</i> = 7.5 Hz, 2H), 1.60-1.70 (m, 2H), 2.39 (s, 3H), 2.63 (s, 3H), 3.91 (t, <i>J</i> = 7.9 Hz, 2H), 4.60 (s, 2H), 6.05 (s, 1H), 7.20-7.40 (m, 5H).
3-106		0.98 (t, <i>J</i> = 7.5 Hz, 3H), 1.43 (sextet, <i>J</i> = 7.5 Hz, 2H), 1.60-1.72 (m, 2H), 2.39 (s, 3H), 2.61 (s, 3H), 2.93 (t-like, 2H), 3.63 (t-like, 2H), 4.00 (t, <i>J</i> = 7.9 Hz, 2H), 6.04 (s, 1H), 7.17-7.33 (m, 5H).
3-107		0.97 (t, <i>J</i> = 7.5 Hz, 3H), 1.42 (sextet, <i>J</i> = 7.5 Hz, 2H), 1.58-1.72 (m, 2H), 2.08 (s, 3H), 2.41 (s, 3H), 2.52 (s, 3H), 4.08 (t, <i>J</i> = 7.5 Hz, 2H), 4.62 (s, 2H), 7.20-7.42 (m, 5H), 9.02 (br s, 1H).
3-108		0.98 (t, <i>J</i> = 7.5 Hz, 3H), 1.43 (sextet, <i>J</i> = 7.5 Hz, 2H), 1.58-1.72 (m, 2H), 2.07 (s, 3H), 2.40 (s, 3H), 2.44 (s, 3H), 2.93 (t, <i>J</i> = 7.5 Hz, 2H), 3.67 (t, <i>J</i> = 7.5 Hz, 2H), 4.07 (t, <i>J</i> = 7.8 Hz, 2H), 7.16-7.34 (m, 5H), 8.47 (br s, 1H).

表 8 3

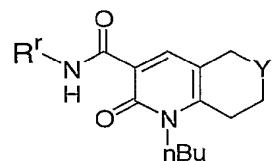
化合物 No.	構造	<sup>1</sup> H-NMR (CDCl <sub>3</sub> )
3-109		1.00-1.28 (m, 4H), 1.56-1.90 (m, 7H), 2.18 (s, 3H), 2.39 (s, 3H), 4.00 (br s, 2H), 4.64 (d, <i>J</i> = 6.0 Hz, 2H), 7.20-7.40 (m, 5H), 8.35 (s, 1H), 10.3 (br s, 1H).
3-110		1.00-1.30 (m, 4H), 1.58-1.90 (m, 7H), 2.93 (t, <i>J</i> = 7.5 Hz, 2H), 3.62-3.69 (m, 2H), 4.01 (br s, 2H), 7.18-7.35 (m, 5H), 8.32 (s, 1H), 10.3 (br s, 1H).
3-111		0.92 (t, <i>J</i> = 7.2 Hz, 3H), 1.37-1.42 (m, 4H), 1.60-1.75 (m, 2H), 2.18 (s, 3H), 2.40 (s, 3H), 4.08 (t, <i>J</i> = 8.1 Hz, 2H), 4.64 (d, <i>J</i> = 5.7 Hz, 2H), 7.20-7.40 (m, 5H), 8.35 (s, 1H), 10.3 (br s, 1H).
3-112		0.94 (t, <i>J</i> = 7.2 Hz, 3H), 1.38-1.42 (m, 4H), 1.60-1.75 (m, 2H), 2.18 (s, 3H), 2.40 (s, 3H), 2.93 (t, <i>J</i> = 7.8 Hz, 2H), 3.60-3.70 (m, 2H), 4.10 (t, <i>J</i> = 7.8 Hz, 2H), 7.20-7.35 (m, 5H), 8.31 (s, 1H), 10.03 (br s, 1H).

表 8 4



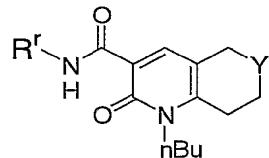
化合物 No.	R <sup>r</sup>		<sup>1</sup> H-NMR (CDCl <sub>3</sub> )
4-001		-CH <sub>2</sub> -	0.97 (t, <i>J</i> = 7.5 Hz, 3H), 1.43 (sextet, <i>J</i> = 7.5 Hz, 2H), 1.62 (quint, <i>J</i> = 7.5 Hz, 2H), 1.74 (quint, <i>J</i> = 6.0 Hz, 2H), 1.88 (quint, <i>J</i> = 6.0 Hz, 2H), 2.62 (t, <i>J</i> = 6.0 Hz, 2H), 2.74 (t, <i>J</i> = 6.0 Hz, 2H), 4.03 (t, <i>J</i> = 7.8 Hz, 2H), 4.64 (d, <i>J</i> = 6.0 Hz, 2H), 7.23-7.38 (m, 5H), 8.28 (s, 1H), 10.82 (br t, <i>J</i> = 6.0 Hz, 1H).
4-002		-CH <sub>2</sub> -	0.99 (t, <i>J</i> = 7.5 Hz, 3H), 1.45 (sextet, <i>J</i> = 7.5 Hz, 2H), 1.63 (quint, <i>J</i> = 7.5 Hz, 2H), 1.74 (quint, <i>J</i> = 6.0 Hz, 2H), 1.88 (quint, <i>J</i> = 6.0 Hz, 2H), 2.62 (t, <i>J</i> = 6.0 Hz, 2H), 2.74 (t, <i>J</i> = 6.0 Hz, 2H), 2.93 (t, <i>J</i> = 7.8 Hz, 2H), 3.66 (dt, <i>J</i> = 9.0 Hz, 6.0 Hz, 2H), 4.03 (t, <i>J</i> = 7.8 Hz, 2H), 7.20-7.83 (m, 5H), 8.25 (s, 1H), 10.05 (br t, <i>J</i> = 6.0 Hz, 1H).
4-003		-CH <sub>2</sub> -	0.99 (t, <i>J</i> = 7.5 Hz, 3H), 1.45 (sextet, <i>J</i> = 7.5 Hz, 2H), 1.66 (quint, <i>J</i> = 7.5 Hz, 2H), 1.73 (quint, <i>J</i> = 6.0 Hz, 2H), 1.87 (quint, <i>J</i> = 6.0 Hz, 2H), 2.61 (t, <i>J</i> = 6.0 Hz, 2H), 2.73 (t, <i>J</i> = 6.0 Hz, 2H), 2.82 (t, <i>J</i> = 7.8 Hz, 2H), 3.60 (dt, <i>J</i> = 9.0 Hz, 6.0 Hz, 2H), 4.03 (t, <i>J</i> = 7.5 Hz, 2H), 6.65 (dd, <i>J</i> = 6.3 Hz, 2.1 Hz, 2H), 7.05 (dd, <i>J</i> = 6.3 Hz, 2.1 Hz, 2H), 8.23 (s, 1H), 10.01 (br t, <i>J</i> = 6.0 Hz, 1H).
4-004		-CH <sub>2</sub> -	0.99 (t, <i>J</i> = 7.2 Hz, 3H), 1.44 (sextet, <i>J</i> = 7.2 Hz, 2H), 1.65 (quint, <i>J</i> = 7.2 Hz, 2H), 1.74 (quint, <i>J</i> = 6.0 Hz, 2H), 1.88 (quint, <i>J</i> = 6.0 Hz, 2H), 2.64 (t, <i>J</i> = 6.0 Hz, 2H), 2.74 (t, <i>J</i> = 6.0 Hz, 2H), 2.94 (t, <i>J</i> = 7.5 Hz, 2H), 3.70 (q, <i>J</i> = 6.9 Hz, 2H), 4.03 (t, <i>J</i> = 7.8 Hz, 2H), 7.20 (d, <i>J</i> = 4.8 Hz, 2H), 8.22 (s, 1H), 8.51 (br s, 2H), 10.10 (br t, <i>J</i> = 6.0 Hz, 1H).
4-005		-CH <sub>2</sub> -	1.01 (t, <i>J</i> = 7.5 Hz, 3H), 1.44 (sextet, <i>J</i> = 7.5 Hz, 2H), 1.70 (quint, <i>J</i> = 7.5 Hz, 2H), 1.76 (quint, <i>J</i> = 6.0 Hz, 2H), 1.91 (quint, <i>J</i> = 6.0 Hz, 2H), 2.66 (t, <i>J</i> = 6.0 Hz, 2H), 2.78 (t, <i>J</i> = 6.0 Hz, 2H), 4.09 (t, <i>J</i> = 7.8 Hz, 2H), 7.09 (t, <i>J</i> = 7.5 Hz, 1H), 7.34 (t, <i>J</i> = 7.5 Hz, 2H), 7.77 (d, <i>J</i> = 7.5 Hz, 2H), 8.34 (s, 1H), 12.18 (br s, 1H).

表 8 5



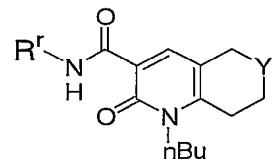
化合物 No.	$R^r$		$^1H$ -NMR ( $CDCl_3$ )
4-006		$-\text{CH}_2-$	0.98 (t, $J = 7.5$ Hz, 3H), 1.43 (sextet, $J = 7.5$ Hz, 2H), 1.65 (quint, $J = 7.5$ Hz, 2H), 1.74 (quint, $J = 6.0$ Hz, 2H), 1.88 (quint, $J = 6.0$ Hz, 2H), 2.62 (t, $J = 6.0$ Hz, 2H), 2.74 (t, $J = 6.0$ Hz, 2H), 4.02 (t, $J = 7.8$ Hz, 2H), 4.53 (d, $J = 6.0$ Hz, 2H), 5.02 (s, 2H), 6.74 (d, $J = 7.8$ Hz, 1H), 6.81 (dd, $J = 7.8$ Hz, 1.8 Hz, 1H), 6.86 (d, $J = 1.8$ Hz, 1H), 8.27 (s, 1H), 10.26 (br t, $J = 6.0$ Hz, 1H).
4-007		$-\text{CH}_2-$	0.98 (t, $J = 7.5$ Hz, 3H), 1.44 (sextet, $J = 7.5$ Hz, 2H), 1.63 (quint, $J = 7.5$ Hz, 2H), 1.73 (quint, $J = 6.0$ Hz, 2H), 1.88 (quint, $J = 6.0$ Hz, 2H), 2.62 (t, $J = 6.0$ Hz, 2H), 2.74 (t, $J = 6.0$ Hz, 2H), 4.03 (t, $J = 7.8$ Hz, 2H), 4.62 (d, $J = 5.4$ Hz, 2H), 6.25 (dd, $J = 3.0$ Hz, 0.9 Hz, 1H), 6.28-6.31 (m, 1H), 7.35 (d, $J = 0.9$ Hz, 1H), 8.26 (s, 1H), 10.25 (br t, $J = 5.4$ Hz, 1H).

表 8 6



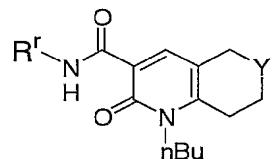
化合物 No.	R <sup>r</sup>	Y	<sup>1</sup> H-NMR (CDCl <sub>3</sub> )
4-008		-CH <sub>2</sub> -	0.98 (t, <i>J</i> = 7.5 Hz, 3H), 1.43 (sextet, <i>J</i> = 7.5 Hz, 2H), 1.62 (quint, <i>J</i> = 7.5 Hz, 2H), 1.74 (quint, <i>J</i> = 6.0 Hz, 2H), 1.88 (quint, <i>J</i> = 6.0 Hz, 2H), 2.62 (t, <i>J</i> = 6.0 Hz, 2H), 2.74 (t, <i>J</i> = 6.0 Hz, 2H), 4.03 (t, <i>J</i> = 7.8 Hz, 2H), 4.59 (d, <i>J</i> = 6.0 Hz, 2H), 7.26 (s, 2H), 7.28 (s, 2H), 8.26 (s, 1H), 10.35 (br t, <i>J</i> = 6.0 Hz, 1H).
4-009		-CH <sub>2</sub> -	0.97 (t, <i>J</i> = 7.5 Hz, 3H), 1.43 (sextet, <i>J</i> = 7.5 Hz, 2H), 1.64 (quint, <i>J</i> = 7.5 Hz, 2H), 1.74 (quint, <i>J</i> = 6.0 Hz, 2H), 1.88 (quint, <i>J</i> = 6.0 Hz, 2H), 2.62 (t, <i>J</i> = 6.0 Hz, 2H), 2.73 (t, <i>J</i> = 6.0 Hz, 2H), 3.78 (s, 3H), 4.01 (t, <i>J</i> = 7.8 Hz, 2H), 4.57 (d, <i>J</i> = 6.0 Hz, 2H), 6.85 (d, <i>J</i> = 9.0 Hz, 2H), 7.29 (d, <i>J</i> = 9.0 Hz, 2H), 8.27 (s, 1H), 10.24 (br t, <i>J</i> = 6.0 Hz, 1H).
4-010		-O-	0.98 (t, <i>J</i> = 7.5 Hz, 3H), 1.43 (sextet, <i>J</i> = 7.5 Hz, 2H), 1.66 (quint, <i>J</i> = 7.5 Hz, 2H), 2.82 (t, <i>J</i> = 6.0 Hz, 2H), 4.01 (t, <i>J</i> = 6.0 Hz, 2H), 4.02 (t, <i>J</i> = 7.5 Hz, 2H), 4.60 (s, 2H), 4.64 (d, <i>J</i> = 6.0 Hz, 2H), 7.24-7.38 (m, 5H), 8.22 (s, 1H), 10.22 (br t, <i>J</i> = 6.0 Hz, 1H).
4-011		-O-	1.00 (t, <i>J</i> = 7.5 Hz, 3H), 1.45 (sextet, <i>J</i> = 7.5 Hz, 2H), 1.69 (quint, <i>J</i> = 7.5 Hz, 2H), 2.83 (t, <i>J</i> = 6.0 Hz, 2H), 2.93 (t, <i>J</i> = 7.5 Hz, 2H), 3.67 (dt, <i>J</i> = 9.0 Hz, 6.0 Hz, 2H), 4.01 (t, <i>J</i> = 6.0 Hz, 2H), 4.03 (t, <i>J</i> = 7.5 Hz, 2H), 4.60 (s, 2H), 7.18-7.36 (m, 5H), 8.19 (s, 1H), 9.96 (br t, <i>J</i> = 6.0 Hz, 1H).
4-012		-O-	0.99 (t, <i>J</i> = 7.5 Hz, 3H), 1.45 (sextet, <i>J</i> = 7.5 Hz, 2H), 1.67 (quint, <i>J</i> = 7.5 Hz, 2H), 2.82 (t, <i>J</i> = 6.0 Hz, 2H), 2.83 (t, <i>J</i> = 7.5 Hz, 2H), 3.61 (dt, <i>J</i> = 9.0 Hz, 6.0 Hz, 2H), 4.01 (t, <i>J</i> = 6.0 Hz, 2H), 4.03 (t, <i>J</i> = 7.5 Hz, 2H), 4.59 (s, 2H), 6.71 (d, <i>J</i> = 7.5 Hz, 2H), 7.07 (d, <i>J</i> = 7.5 Hz, 2H), 8.17 (s, 1H), 9.92 (br t, <i>J</i> = 6.0 Hz, 1H).

表 8 7



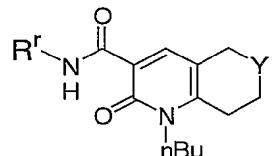
化合物 No.	R <sup>r</sup>		<sup>1</sup> H-NMR (CDCl <sub>3</sub> )
4-013			0.96 (t, <i>J</i> = 7.5 Hz, 3H), 1.41 (sextet, <i>J</i> = 7.5 Hz, 2H), 1.60-1.73 (m, 2H), 2.78 (d, <i>J</i> = 4.2 Hz, 2H), 2.84 (d, <i>J</i> = 4.2 Hz, 2H), 3.48 (s, 2H), 3.69 (s, 2H), 3.99 (t, <i>J</i> = 7.5 Hz, 2H), 4.63 (d, <i>J</i> = 6.0 Hz, 2H), 7.26-7.37 (m, 10H), 8.21 (s, 1H), 10.24 (br t, <i>J</i> = 6.0 Hz, 1H).
4-014			0.98 (t, <i>J</i> = 7.5 Hz, 3H), 1.43 (sextet, <i>J</i> = 7.5 Hz, 2H), 1.65 (quint, <i>J</i> = 7.5 Hz, 2H), 2.78 (d, <i>J</i> = 4.5 Hz, 2H), 2.85 (d, <i>J</i> = 4.5 Hz, 2H), 2.92 (t, <i>J</i> = 7.5 Hz, 2H), 3.48 (s, 2H), 3.66 (dt, <i>J</i> = 9.0 Hz, 6.0 Hz, 2H), 3.69 (s, 2H), 4.01 (t, <i>J</i> = 7.8 Hz, 2H), 7.23-7.38 (m, 10H), 8.18 (s, 1H), 9.99 (br t, <i>J</i> = 6.0 Hz, 1H).

表 8 8



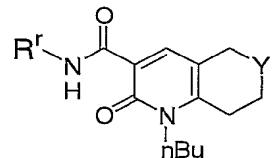
化合物 No.	R <sup>r</sup>		<sup>1</sup> H-NMR (CDCl <sub>3</sub> )
4-015			0.97 (t, <i>J</i> = 7.5 Hz, 3H), 1.43 (sextet, <i>J</i> = 7.5 Hz, 2H), 1.65 (quint, <i>J</i> = 7.5 Hz, 2H), 2.77 (t, <i>J</i> = 6.0 Hz, 2H), 3.19 (t, <i>J</i> = 6.0 Hz, 2H), 3.86 (s, 2H), 4.01 (t, <i>J</i> = 7.8 Hz, 2H), 4.64 (d, <i>J</i> = 6.0 Hz, 2H), 7.23-7.38 (m, 5H), 8.24 (s, 1H), 10.27 (br t, <i>J</i> = 6.0 Hz, 1H).
4-016			0.99 (t, <i>J</i> = 7.5 Hz, 3H), 1.45 (sextet, <i>J</i> = 7.5 Hz, 2H), 1.66 (quint, <i>J</i> = 7.5 Hz, 2H), 2.78 (t, <i>J</i> = 6.0 Hz, 2H), 2.93 (t, <i>J</i> = 7.5 Hz, 2H), 3.19 (t, <i>J</i> = 6.0 Hz, 2H), 3.67 (dt, <i>J</i> = 9.0 Hz, 6.0 Hz, 2H), 3.86 (s, 2H), 4.02 (t, <i>J</i> = 7.8 Hz, 2H), 7.18-7.34 (m, 5H), 8.21 (s, 1H), 10.01 (br t, <i>J</i> = 6.0 Hz, 1H).
4-017			0.98 (t, <i>J</i> = 7.5 Hz, 3H), 1.44 (sextet, <i>J</i> = 7.5 Hz, 2H), 1.66 (quint, <i>J</i> = 7.5 Hz, 2H), 2.93 (br t, <i>J</i> = 6.0 Hz, 2H), 3.80 (br t, <i>J</i> = 6.0 Hz, 2H), 4.02 (t, <i>J</i> = 7.8 Hz, 2H), 4.49 (s, 2H), 4.62 (d, <i>J</i> = 6.0 Hz, 2H), 7.23-7.35 (m, 5H), 7.43-7.51 (m, 5H), 8.10 (s, 1H), 10.16 (br t, <i>J</i> = 6.0 Hz, 1H).
4-018			0.98 (t, <i>J</i> = 7.5 Hz, 3H), 1.43 (sextet, <i>J</i> = 7.5 Hz, 2H), 1.55-1.90 (m, 10H), 2.84 (quint, <i>J</i> = 6.0 Hz, 1H), 2.91 (t, <i>J</i> = 7.5 Hz, 2H), 3.82 (t, <i>J</i> = 6.0 Hz, 1/3 × 2H), 3.91 (t, <i>J</i> = 6.0 Hz, 2/3 × 2H), 4.01 (t, <i>J</i> = 7.8 Hz, 2H), 4.52 (s, 2/3 × 2H), 4.59 (s, 1/3 × 2H), 4.65 (d, <i>J</i> = 6.0 Hz, 2H), 7.24-7.39 (m, 5H), 8.31 (s, 2/3 × 1H), 8.33 (s, 1/3 × 1H), 10.20 (br t, <i>J</i> = 6.0 Hz, 1H).

表 8 9



化合物 No.	$\text{R}^{\text{r}}$	$\text{Y}$	$^1\text{H-NMR} (\text{CDCl}_3)$
4-019			0.98 (t, $J = 7.5$ Hz, 3H), 0.99 (t, $J = 7.5$ Hz, 3H), 1.43 (sextet, $J = 7.5$ Hz, 2H), 1.66 (quint, $J = 7.5$ Hz, 2H), 1.67 (quint, $J = 7.5$ Hz, 2H), 2.37 (t, $J = 7.5$ Hz, 2H), 2.84 (t, $J = 6.0$ Hz, 2/3 × 2H), 2.89 (t, $J = 6.0$ Hz, 1/3 × 2H), 3.77 (t, $J = 6.0$ Hz, 1/3 × 2H), 3.90 (t, $J = 6.0$ Hz, 2/3 × 2H), 4.01 (t, $J = 7.8$ Hz, 2H), 4.47 (s, 2/3 × 2H), 4.58 (s, 1/8 × 2H), 4.65 (d, $J = 6.0$ Hz, 2H), 7.24-7.39 (m, 5H), 8.30 (s, 2/3 × 1H), 8.33 (s, 1/3 × 1H), 10.19 (br t, $J = 6.0$ Hz, 1H).
4-020			0.98 (t, $J = 7.5$ Hz, 3H), 1.29 (s, 9H), 1.43 (sextet, $J = 7.5$ Hz, 2H), 1.65 (quint, $J = 7.5$ Hz, 2H), 2.85 (t, $J = 6.0$ Hz, 2H), 3.90 (t, $J = 6.0$ Hz, 2H), 4.00 (t, $J = 7.8$ Hz, 2H), 4.62 (s, 2H), 4.64 (d, $J = 6.0$ Hz, 2H), 7.24-7.38 (m, 5H), 8.31 (s, 1H), 10.20 (br t, $J = 6.0$ Hz, 1H).

表 9 0



化合物 No.	$R^r$	$\text{Y}$	$^1\text{H-NMR} (\text{CDCl}_3)$
4-021			0.88 (t, $J = 7.5$ Hz, $1/3 \times 3\text{H}$ ), 0.99 (t, $J = 7.5$ Hz, $2/3 \times 3\text{H}$ ), 1.44 (sextet, $J = 7.5$ Hz, 2H), 1.66 (quint, $J = 7.5$ Hz, 2H), 2.86 (t, $J = 6.0$ Hz, $1/3 \times 2\text{H}$ ), 2.99 (t, $J = 6.0$ Hz, $2/3 \times 2\text{H}$ ), 3.69 (t, $J = 6.0$ Hz, $1/3 \times 2\text{H}$ ), 4.02 (t, $J = 6.0$ Hz, $2/3 \times 2\text{H}$ ), 4.06 (t, $J = 7.8$ Hz, 2H), 4.40 (s, $1/3 \times 2\text{H}$ ), 4.62 (s, $2/3 \times 2\text{H}$ ), 4.63 (d, $J = 6.0$ Hz, 2H), 7.24-7.38 (m, 7H), 8.11 (s, $2/3 \times 1\text{H}$ ), 8.39 (s, $1/3 \times 1\text{H}$ ), 8.76 (d, $J = 5.4$ Hz, 2H), 10.12 (br t, $J = 6.0$ Hz, 1H).
4-022			1.00 (t, $J = 7.5$ Hz, 3H), 1.46 (sextet, $J = 7.5$ Hz, 2H), 1.67 (quint, $J = 7.5$ Hz, 2H), 2.91 (t, $J = 7.5$ Hz, 2H), 2.92 (t, $J = 6.0$ Hz, 2H), 3.66 (dt, $J = 6.8$ Hz, 6.9 Hz, 2H), 4.03 (t, $J = 6.0$ Hz, 2H), 4.04 (t, $J = 7.5$ Hz, 2H), 4.48 (br s, $2/3 \times 2\text{H}$ ), 4.68 (br s, $1/3 \times 2\text{H}$ ), 7.20-7.32 (m, 5H), 7.44-7.51 (m, 5H), 8.08 (br s, $2/3 \times 1\text{H}$ ), 8.37 (br s, $1/3 \times 1\text{H}$ ), 9.89 (br t, $J = 6.0$ Hz, 1H).
4-023			0.99 (t, $J = 7.5$ Hz, 3H), 1.44 (sextet, $J = 7.5$ Hz, 2H), 1.60-1.88 (m, 10H), 2.83 (t, $J = 6.0$ Hz, 2H), 2.89 (quint, $J = 6.0$ Hz, 1H), 2.93 (t, $J = 7.5$ Hz, 2H), 3.68 (dt, $J = 6.6$ Hz, 7.2 Hz, 2H), 3.82 (t, $J = 6.0$ Hz, $1/3 \times 2\text{H}$ ), 3.91 (t, $J = 6.0$ Hz, $2/3 \times 2\text{H}$ ), 4.02 (t, $J = 7.8$ Hz, 2H), 4.52 (s, $2/3 \times 2\text{H}$ ), 4.58 (s, $1/3 \times 2\text{H}$ ), 7.18-7.34 (m, 5H), 8.27 (s, $2/3 \times 1\text{H}$ ), 8.30 (s, $1/3 \times 1\text{H}$ ), 9.93 (br t, $J = 6.0$ Hz, 1H).